Chapter 3.0
Project Description

The proposed Gregory Canyon Landfill will provide refuse capacity to meet a portion of the total disposal needs of the San Diego County integrated waste management system. This chapter contains a detailed description of the proposed Gregory Canyon Landfill project, including: the various components of the project, the operation of the landfill; the environmental control features; the projected site life and landfill capacity; the construction and phased development; site closure; and the ultimate end-use of the site. In addition, this chapter also describes the permits and responsible agencies involved in the review of the project.

3.1 SITE LOCATION AND DESCRIPTION

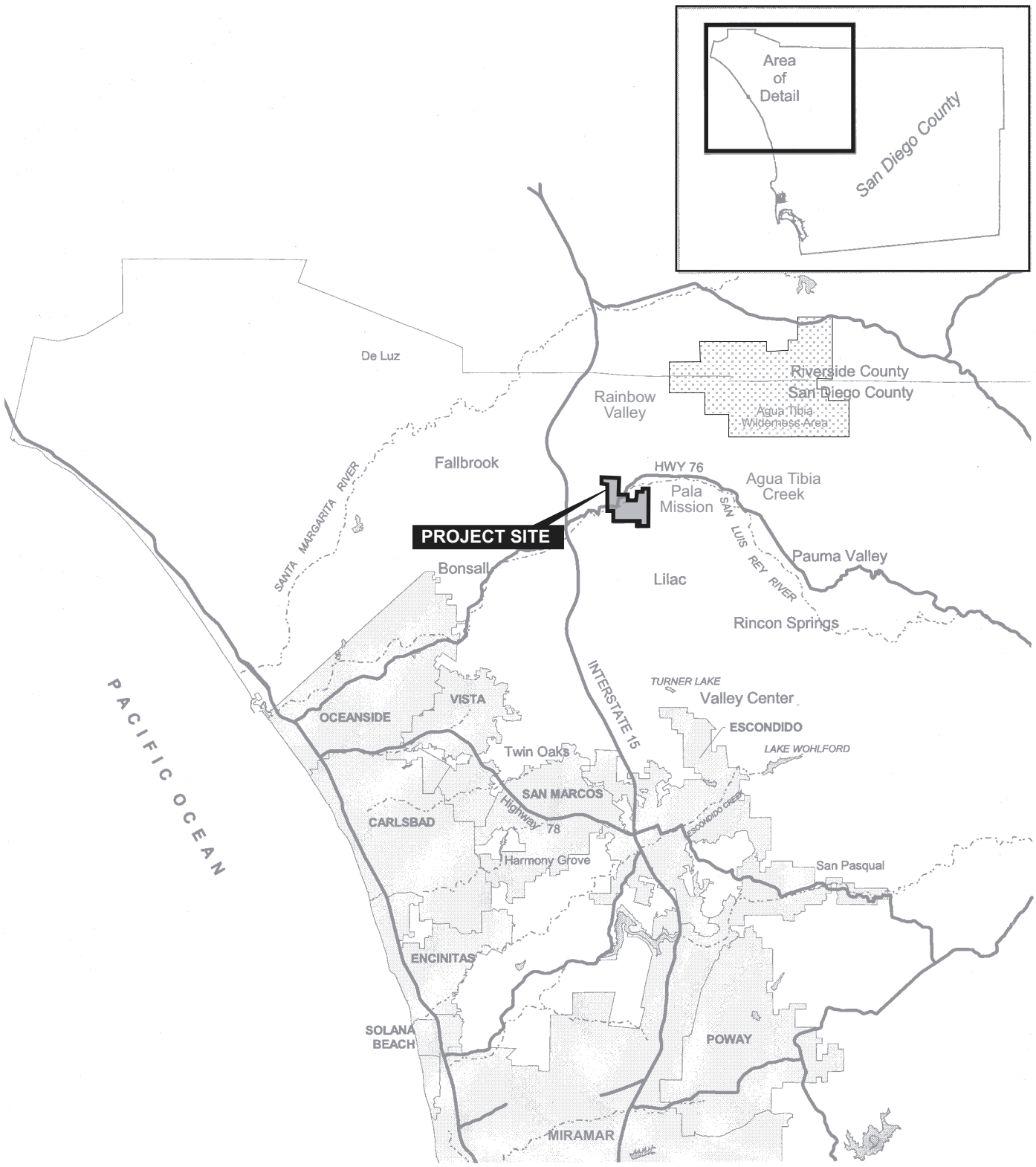
The proposed Gregory Canyon Landfill site is located in northern San Diego County approximately three miles east of Interstate 15 (I-15) and two miles southwest of the community of Pala (Exhibit 3-1). SR 76 and the San Luis Rey River run east-west through the project site. The majority of the project site lies to the south of SR 76 but part of the western portion of the site lies to the north of SR 76. The eastern portion of the project site makes up the western slope of Gregory Mountain. The Canyon itself is located approximately in the center of the project site. The site comprises portions of Sections 4 and 5 of Township 10 South and Sections 32 and 33 of Township 9 South, Range 2 West of USGS 7.5' Pala Quadrangle (Exhibit 3-2).

The approximately 1,770 acre site is made up of 38 parcels. There are three large, regional easements, that cross the property: SR 76, a San Diego Gas & Electric (SDG&E) transmission corridor, and San Diego Pipelines Nos. 1 and 2 (First San Diego Aqueduct) (Exhibit 3-2). SR 76, a two lane highway, is located in an easement that occupies about 16.5 acres, effectively reducing the area to 1,753.5 acres.

The Escondido and Talega electrical transmission network (Tie Line 23030), which contains a 230 kilovolt (kV) and the Pala-Lilac 69 kV electrical transmission lines, are located on common structures within a 300-foot wide easement, which crosses the site in a north-south direction along the lower slopes of Gregory Mountain. The transmission lines are owned and maintained by SDG&E. The transmission lines are maintained by SDG&E along unimproved dirt roads within the easement. SDG&E owns two parcels totaling 13 acres within this transmission corridor. These parcels will be incorporated into the site area either through purchase, land swap or some other mechanism, resulting in a total site size of approximately 1,766.5 acres.

The San Diego Pipelines Nos. 1 and 2 (First San Diego Aqueduct) are located in an easement with an average width of 150 feet running north-south through approximately the middle of the site. The Aqueduct easement contains two 48-inch pipelines located approximately 10 to 15 feet below ground surface.

The property's eastern boundary is shared with the Pala Indian Reservation. The ALTA survey of the project site indicates a straight north-south eastern boundary line while the USGS map indicates a slightly convex common boundary and the assessor's parcel map indicates yet a third configuration. Although these mapping discrepancies exist, the survey represents the actual property lines.



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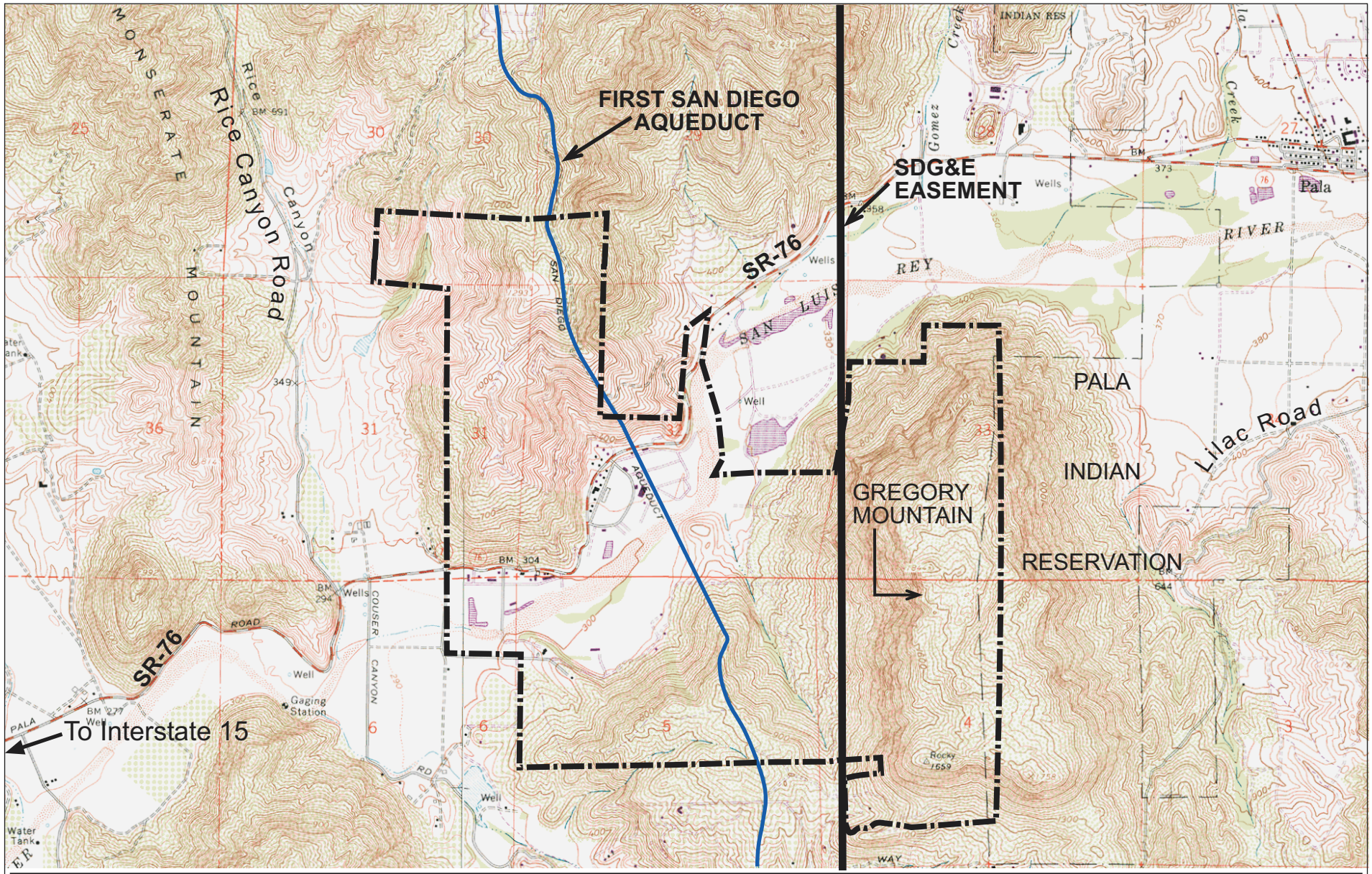
NOT TO SCALE

Exhibit 3-1
Regional Location of the Project Site

Source: SANDAG GIS Data, 1997 and David Evans and Associates, Inc.,



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0 .05 1 Mile

Exhibit 3-2
USGS Map of the Project Area

Sources: U.S.G.S., 7.5-Minute Series Pala Quadrangle and PCR Services Corporation, 1999

The entire 1,770-acre site was identified in Proposition C as the site for the proposed Gregory Canyon Landfill. The site is currently owned by Gregory Canyon, Ltd. (GCL), the project applicant.

Elevations on the project site within the canyon range from approximately 1,200 feet above mean sea level (amsl) at the head of the canyon at the south, to 300 feet amsl at the mouth of the canyon in the San Luis Rey River drainage (Exhibit 3-2). Much of the canyon is steep, rugged terrain containing numerous boulder outcrops on the eastern side with only a few isolated boulders on the west canyon wall. The canyon flattens somewhat at the mouth where it meets the alluvial deposits of the San Luis Rey River drainage. A prominent knoll extends into the drainage channel on the west side of the canyon mouth.

The site contains developed and undeveloped land. Today, one dairy is operational on the site. The majority of the dairy operation is situated adjacent to the San Luis Rey River where fenced corrals and feeding facilities are located. Single family homes are located along SR 76. South of the river there are open fields where cows graze and a residence is located. A wooden bridge formerly connecting the two sides of the dairy operations was washed out in 1995 by storm flows. An unpaved, low-flow water crossing now exists adjacent to the damaged bridge structure, and connects the two sides of the dairy.

The San Luis Rey River valley contains a mix of uses, with a predominantly rural character. Agricultural uses are located on the valley floor. Pala Rey Ranch, an agricultural use, is located to the west of the site; H.G. Fenton Materials, Inc., a sand and gravel extraction operation, is located to the northeast; lower Rice Canyon is to the northwest; Couser Canyon is to the south; and the Pala Indian Reservation, which includes a portion of Gregory Mountain, is located to the east. A casino is currently under construction on the Pala Indian Reservation.

There are a few rural residential dwellings on the otherwise undisturbed steep slopes of mountainous terrain across the valley floor beyond the property to the northeast. The San Luis Rey River valley, and east towards Pala, is primarily used for horse breeding farms and pasture. Pala is a small, quiet rural village. Major portions of the valley west of the site are planted with groves. Lancaster Mountain rises 1,485 feet above the southern edge of the valley floor just east of I-15.

3.2 PROJECT COMPONENTS

The Gregory Canyon Landfill Project includes the construction, operation, and closure of the landfill. Section 3 of Proposition C contains a general description of the project. Section A contains a general description of components to be included in the project but allows the size and facilities to be modified based on a detailed site plan submitted as part of the application for the Solid Waste Facilities Permit (SWFP). The application for the SWFP necessitated the preparation of this project level EIR.

All but one of the components listed in Proposition C, Section A have been incorporated into the project. The features identified in Proposition C and included in the project are: a lined landfill, an access road and bridge from SR 76 to the landfill; a scale area; a recyclable goods collection center; a facilities and operation area; two borrow/stockpile areas; a leachate collection and removal system including storage tanks; surface water control facilities, including desilting basins; a water treatment plant; a visitors' center; an administration building; a maintenance office; a shop and yard; a fueling station/storage area; a water tank; a water supply well;

groundwater monitoring wells; a landfill gas collection and recovery system; and a groundwater subdrain collection system.[1] These project components are discussed below and are shown on Exhibits in this Chapter and referenced throughout the EIR.

Approximately 308 acres of the 1,770-acre site, or 17 percent, will be used for landfill activities. Table 3-1 provides a summary of the project components by land area.

TABLE 3-1
SIZE OF PROJECT COMPONENTS

ELEMENT	SIZE (ACRES)
Landfill Footprint	196.3 [a]
Ancillary Facilities Area	11.9
Access Road and Bridge	4.1
Borrow/Stockpile Area—A	22.4
Borrow/Stockpile Area—B	64.5 [b]
Borrow/Stockpile Area Haul Road	3.1
Desilting Basin—East	1.8
Desilting Basin—West	3.7
TOTAL	307.8

[a] Includes 13.1 acres for the three SDG&E transmission pads
[b] Includes approximately 10 acres to the east of the SDCWA easement
Source: Bryan A. Stirrat & Assoc., 2000

Exhibit 3-3 shows the proposed layout of the Gregory Canyon Landfill, the access road and bridge, ancillary facilities area, refuse area footprint, property boundaries, and borrow/stockpile areas. In addition to construction, operation, and closure of the landfill, the project includes widening of SR 76 at the proposed access road and relocation of the existing SDG&E power lines and easement.

3.2.1 LANDFILL FOOTPRINT

Construction of the refuse area containment system will require the mass excavation and removal of native material to generate a northerly sloping bottom area with interior side slopes on the west, south and east. The proposed limits of excavation for the proposed Gregory Canyon Landfill are shown on the master excavation plan (Exhibit 3-4).

The waste containment system will be constructed in three gross fill phases, with each one divided into several smaller stages, as needed to provide continuous refuse disposal capacity through the landfill's projected service life. Initial excavation activities within the refuse

[1] Proposition C identified a truck wash and wash water treatment area, which was originally proposed in the ancillary facilities area, but has been removed. Rather than use a water dependent approach for tire wash, thereby increasing runoff, dry best management practices (BMPs), such as sweeping, the physical removal of loose impediments (i.e., good housekeeping practices), and the use of absorbents will be incorporated. Other features, such as berms around the fueling area and hazardous waste storage area will remain. Equipment maintenance will be conducted within an enclosed building. A Hazardous Waste Exclusion Program will be implemented on the site.

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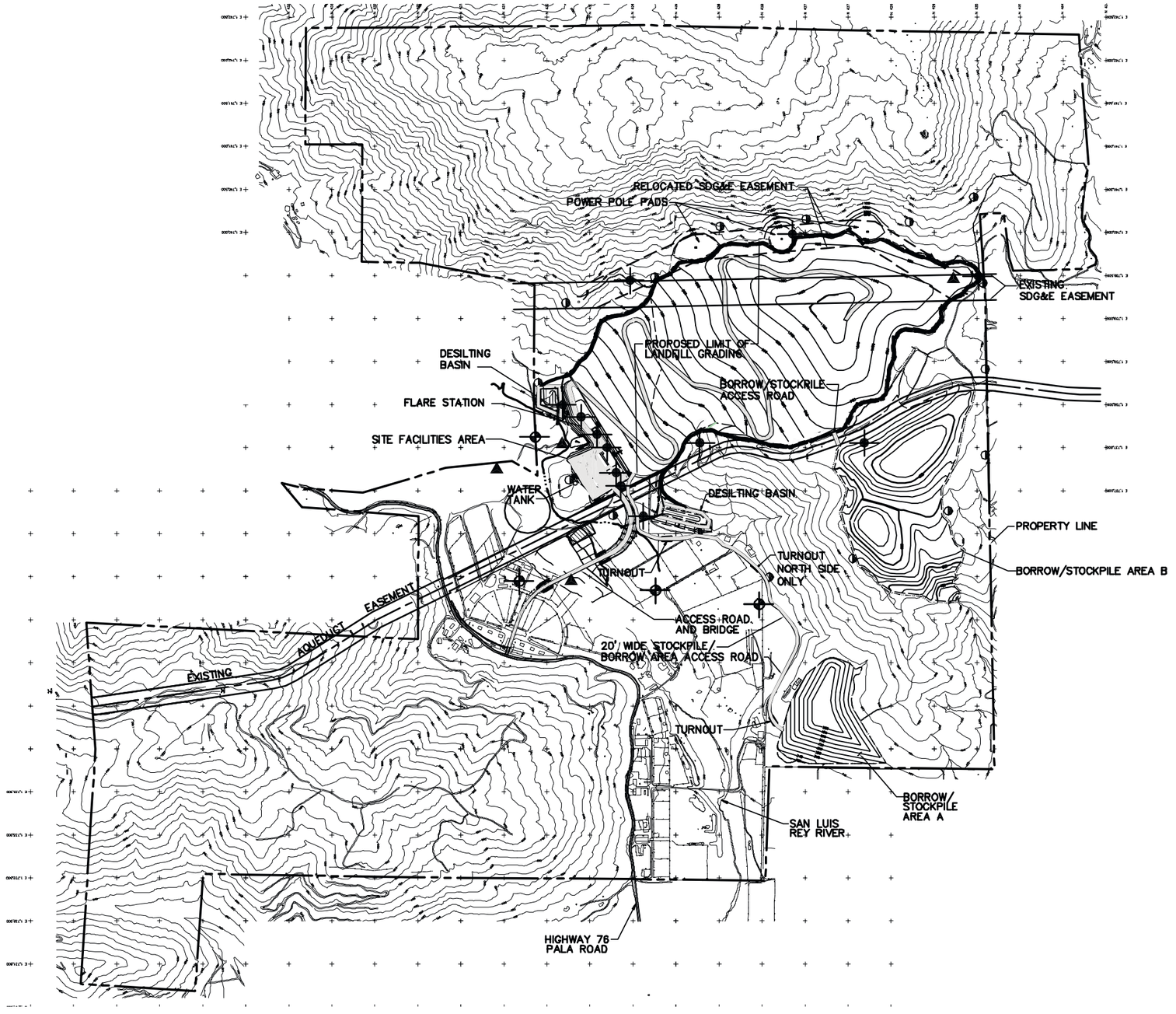

LEGEND

- PROPERTY LINE
- APPROXIMATE LIMIT OF LANDFILL GRADING
- BORROW/STOCKPILE AREA LIMITS
- FINAL CONTOUR
- EXISTING CONTOUR
- ACCESS/HAUL ROAD
- LANDFILL GAS MIGRATION MONITORING PROBE
- SURFACE WATER SAMPLING LOCATION
- BEDROCK AQUIFER MONITORING WELL
- ALLUVIAL AQUIFER MONITORING WELL

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0 1200 Feet

Source: Bryan A. Stirrat & Associates, 2002

Exhibit 3-3
Site Plan

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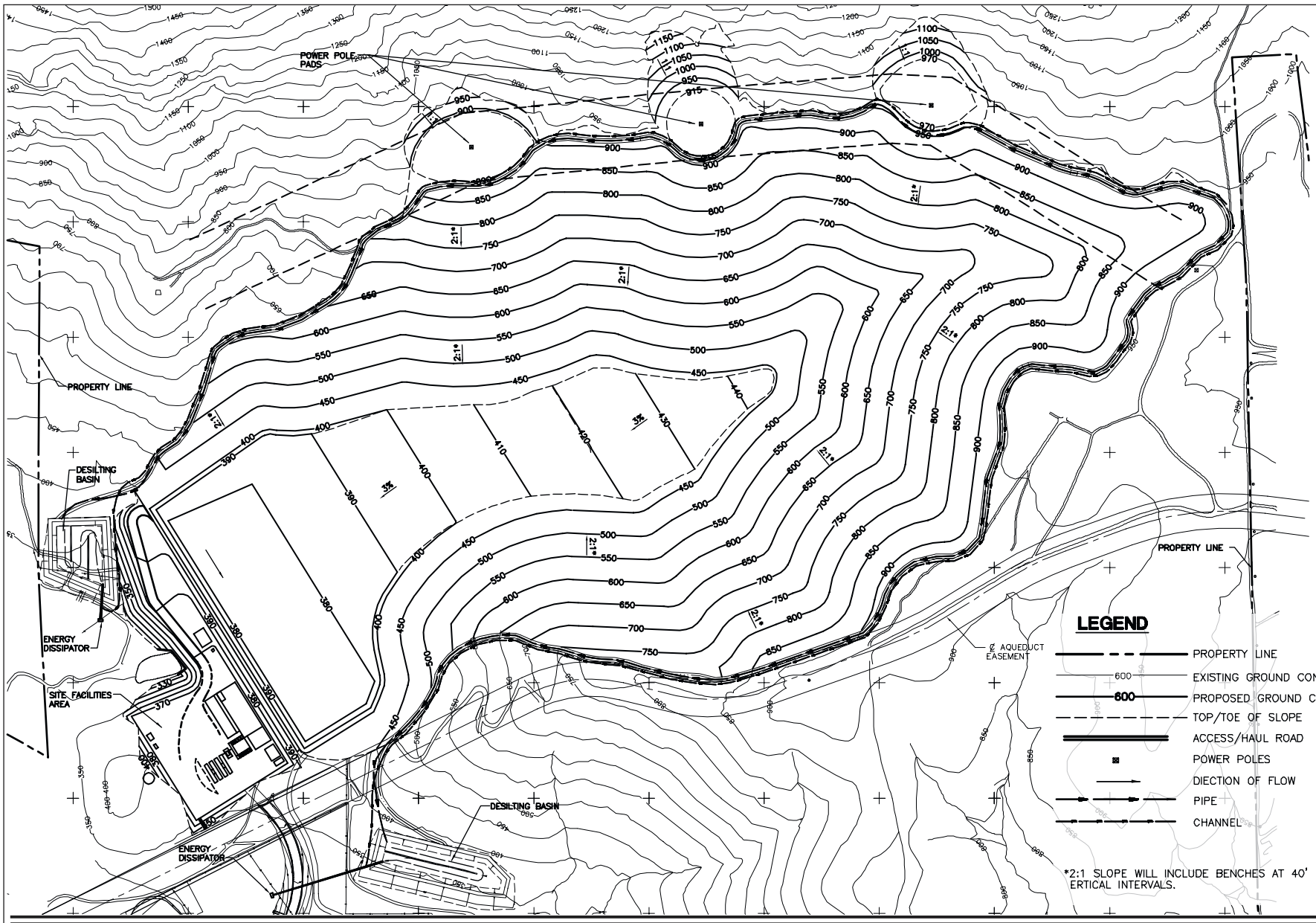

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Exhibit 3-4
Master Excavation of Landfill Footprint

Source: Bryan A. Stirrat & Associates, 2002

footprint will involve the removal of approximately 1.5 million cubic yards (mcy) including all of the alluvial and colluvium so that the landfill will be constructed directly on unyielding bedrock. About 9.8 mcy of material will be excavated within the refuse footprint over the life of the landfill. The mass excavation of the landfill refuse area will require the removal of rock. The rock material will be processed within the southwestern portion of the landfill footprint area using a crusher and screens. Crushed rock will be stored for future use or processed for use as cover or as a base for internal haul roads.[2] The bottom area of the footprint will be graded to drain northerly at a minimum gradient of three percent. The interior side slopes will be cut at a gradient no steeper than 1:1 (horizontal to vertical). The elevations of the finished bottom subgrade or floor area for the refuse footprint range between approximately 370 feet amsl at the northwestern corner to about 440 amsl at the southern portion. From the existing contours to the finished bottom contours, the depth of excavation ranges from near zero to a maximum of about 160 feet deep at the southern end of the canyon.

The lowest portion of the landfill footprint excavation will extend below the piezometric surface (i.e., the highest anticipated groundwater level) within Gregory Canyon. The waste containment system configuration for the project will maintain the required five-foot separation between the highest anticipated groundwater level and the refuse as specified in 27 CCR. In the event that groundwater is encountered during construction operations, dewatering procedures will be implemented to facilitate completion of the excavation and subdrain installation.

To maintain the required five foot separation between the highest groundwater level and the refuse, the proposed liner system below the piezometric surface will be a minimum of five feet thick and will consist of the following components: 1) a composite liner with a two-foot thick soil liner and 60 mil HDPE geomembrane; 2) a one-foot thick, leachate collection and removal system (LCRS); and 3) a two- or three-foot thick protective layer. The liner design for the slope area LCRS does not include the gravel blanket, therefore a thicker protective soil layer is provided on the slopes. Below the piezometric surface, the slope liner will include a three-foot protective cover layer in order to maintain a five-foot thick liner section. The proposed subdrain system in conjunction with the liner system thickness constitutes an engineered alternative as defined under 27 CCR Section 20080(b). As such, a variance is required from the Regional Water Quality Control Board (RWQCB) (Please see Section 3.8, Permits for further discussion.) Two Prescriptive Alternatives, that do not require a variance from the RWQCB for the design, are described and analyzed in Chapter 6 of this Final EIR.

The containment system components from the excavated subsurface to the refuse interface are:

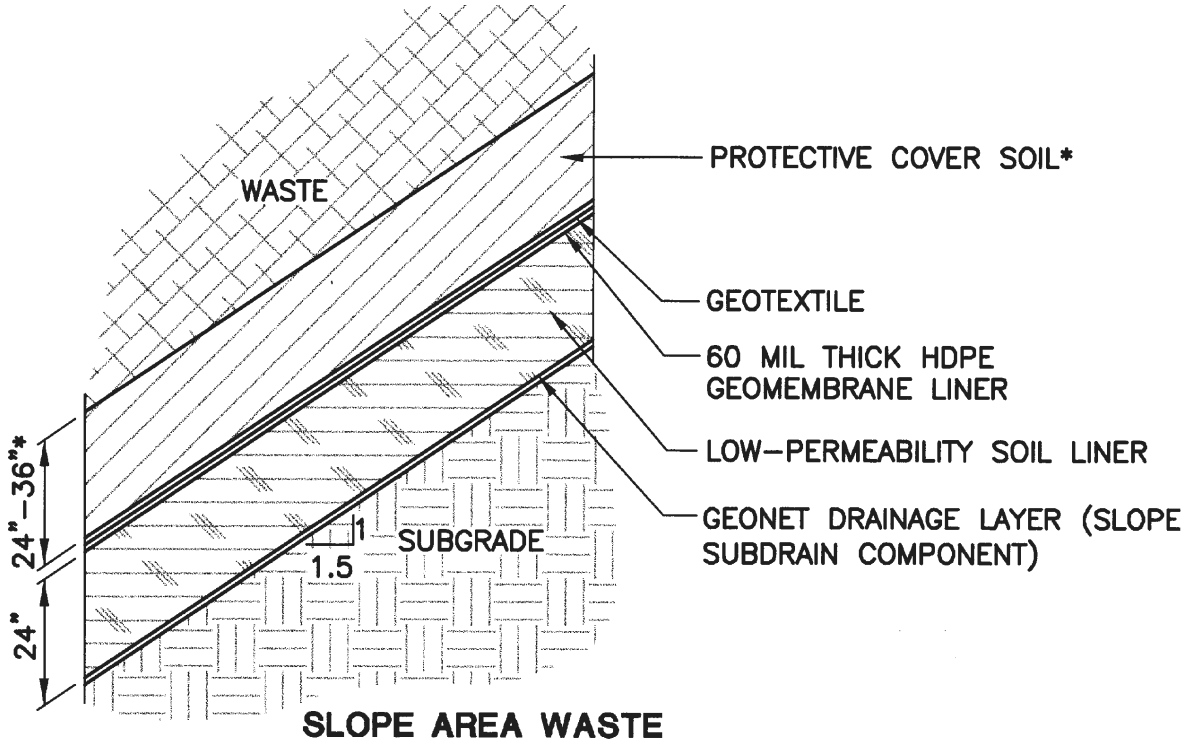
- A ***Subdrain System*** will be placed beneath the liner and will consist of a one foot thick gravel blanket and gravel filled trenches with slotted collector pipes in the bottom areas. The subdrain system on the interior slopes consists of a geonet drainage layer on the slopes and gravel filled trenches and slotted collector pipes at the toe of each bench to transmit

[2] Excess rock may be exported off-site. However, if exportation or sale of aggregate material were to occur, the applicant would obtain a Major Use Permit (MUP), if necessary, prior to the exportation or sale of material. While the borrow/stockpile areas have been designed to accommodate all of the excavated material, the analyses contained in this document represent a worst-case scenario. For example, in the case of traffic, the exportation of material would represent worst-case as it would result in an increase in trips while in aesthetics, the storage of material on-site would represent worst-case as it would use the borrow/stockpile areas to the full extent.

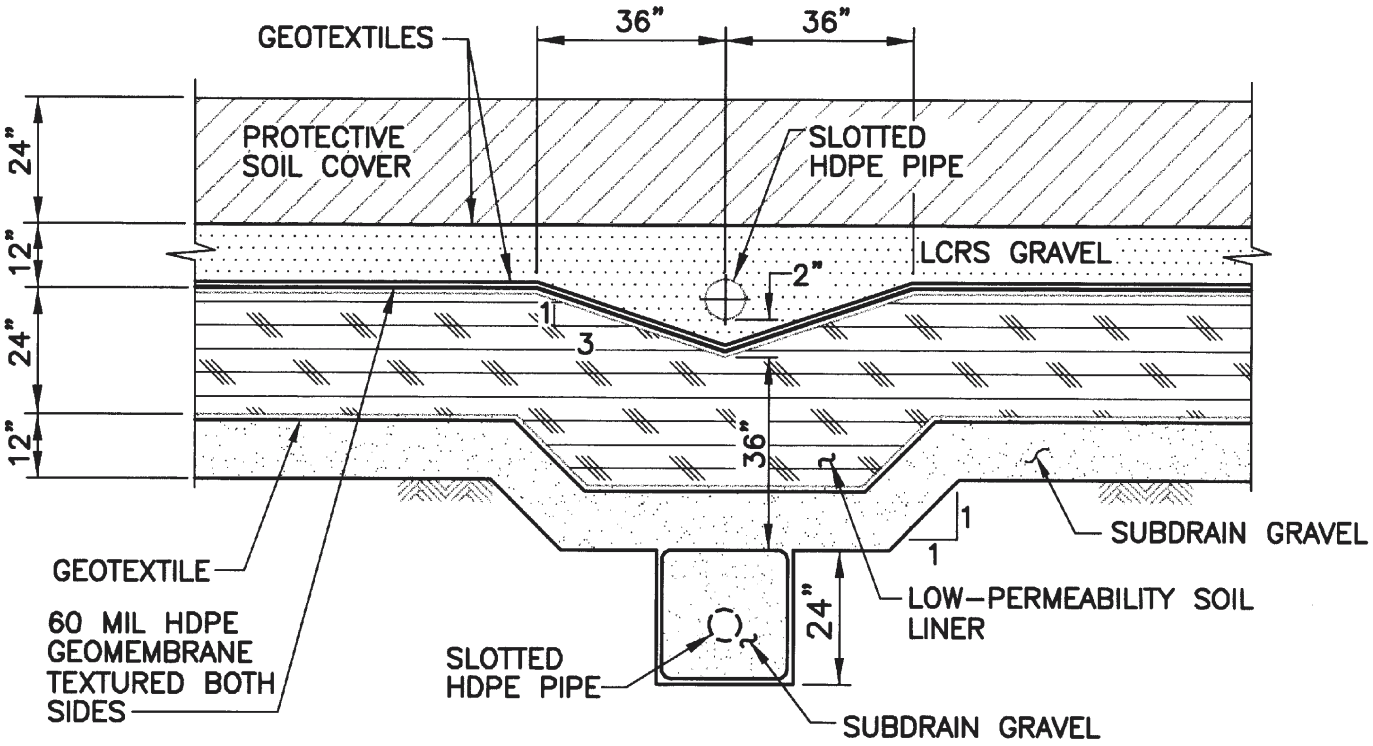
groundwater away from the liner, and convey it by gravity flow to the mouth of the canyon. In addition, chimney drains will be constructed as needed to intercept active seeps. The subdrain system is designed to convey a minimum of two times the highest anticipated groundwater flows (GeoLogic & Associates, Phase V Hydrogeologic Characterization Report, Appendix G). The floor subdrain system is a redundant system in which the permeable gravel pack and the pipe can both convey the anticipated flows. A geotextile layer separates the gravel layer from the low-permeability soil layer on the landfill floor. This geotextile layer prevents the floor subdrain from clogging. The geonet drainage layer on the slope subdrain system will direct flows to the drains located at each bench below the piezometric surface.

- A ***Composite Liner***, constructed according to all State and Federal regulations, will be placed over the entire excavated subgrade (i.e., bottom and side slopes). Federal Subtitle D regulations define a composite liner as a system consisting of two low-permeability components. The lower component of the composite liner will consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1 x 10-7 cm/sec. In accordance with design criteria specified in 40 CFR, 258.40, the upper component of the liner system will consist of a 60-mil high-density polyethylene (HDPE) geomembrane. Exhibit 3-5 provides a detailed cross-section of the proposed bottom and side slope for the composite liner. Liner construction will be monitored under extensive Construction Quality Assurance (CQA)[3] guidelines and Best Management Practices (BMPs) will be followed. The material for the low-permeability liner will either be imported to the site, most likely from the Lake Elsinore area, or be prepared by using on-site material blended with imported bentonite to achieve the desired low-permeability performance criteria. Approximately 530,000 cubic yards of low-permeability material will be needed for the slope liner and 125,000 cubic yards for the floor liner.
- A ***Leachate Collection and Removal System (LCRS)*** will be installed over the synthetic liner to collect and convey any leachate that may be generated within the refuse prism. The system will consist of a one-foot thick gravel layer and HDPE pipe over the entire bottom area. Gravel pipe collectors wrapped with a geotextile fabric will be placed on the interior benches along the slopes. The bottom and slope collectors will be interconnected to convey leachate by gravity flow to the mouth of the canyon to be discharged into two double-walled collection tanks. The LCRS system has been designed to prevent clogging of gravel and the pipe layer. However, in the event of system back-up, clean-outs will be available that can be periodically flushed. In the event of pipe failure, the surrounding gravel layer also has the capacity to convey the leachate to an adjacent pipe or outlet system.
- A ***Protective Cover*** consisting of a minimum two-foot thick sand or soil layer will be placed over the entire liner and LCRS components. A geotextile will separate the protective cover from the underlying LCRS. The protective layer will be constructed to a minimum thickness of two feet. As discussed earlier, the protective soil cover thickness will be a minimum of three feet over the interior slope liner below the piezometric surface.

[3] CQA assures that construction material will be tested, installed and monitored as specified in the design plans and specifications, and that accepted civil engineering practices will be used.



SLOPE AREA WASTE CONTAINMENT SYSTEM



BOTTOM AREA WASTE CONTAINMENT SYSTEM

*OPERATIONS LAYER 24" MINIMUM THICKNESS ABOVE PIEZOMETRIC SURFACE 36" MINIMUM BELOW

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Exhibit 3-5
Proposed Waste Containment System Design

Source: Bryan A. Stirrat & Associates, 2000

3.2.2 BORROW/STOCKPILE AREAS

Approximately 87 acres of borrow/stockpile area will be provided in two locations to the west of the proposed landfill footprint (Exhibit 3-3). Borrow/Stockpile Area A, which is about 22 acres in size, will be located west of the landfill footprint adjacent to the western property boundary. The maximum elevation of Borrow/Stockpile Area A will be 500 feet, which will be about 100 to 180 feet above the existing grade depending on the location. For example, Borrow/Stockpile Area A will rise about 100 feet above the existing topography to the north and south, about 50 feet above the existing grade to the east and about 180 feet above the lowest point to the west.[4] Borrow/Stockpile Area B, which is about 65 acres in size, will be located immediately to the west of the southern portion of the landfill footprint. Borrow/Stockpile Area B will have two decks, with a maximum elevation of 1,020 feet. Borrow/Stockpile Area B ranges from 60 to 120 feet above existing grades to the north, 160 feet above existing grades to the west, 100 feet above existing grades to the east and from 60 to 100 feet above existing grades to the south. [5]

The borrow/stockpile areas will be used to store or excavate material that will be needed in the daily operation of the landfill. For borrow purposes, excavation in the designated areas will be a maximum of 150 feet to maintain positive drainage. During the initial excavation of Phase I of the refuse footprint, a portion of the excavated material will be used for engineered fill necessary to construct the ancillary facilities area and a toe buttress, with the remainder of the material being stockpiled in the landfill footprint or Borrow/Stockpile Area A (Exhibit 3-3). Borrow/Stockpile Area A will be used for stockpiling during the initial construction after which the area will be revegetated with native plant species. Area A will not be used again until about year 25 at which time material will be used from Area A for cover. In subsequent excavation phases, material will be stockpiled within the footprint or in Borrow/Stockpile Area B.

The borrow/stockpile haul road, connecting Borrow/Stockpile Area A with the landfill footprint, will be 20 feet wide and will run along the base of the adjacent hillside with turn-out locations for heavy equipment at three points along the route (Exhibit 3-3). Most of the alignment of the haul road follows an existing dirt road on the site. Access to the larger Borrow/Stockpile Area B will be within the defined limits of the landfill footprint. The maximum slope of the borrow/stockpile haul roads will be 15 percent. Equipment moving between the borrow/stockpile areas and the landfill will cross over the First San Diego Aqueduct. Two reinforced concrete slabs will be placed at grade, one centered over each pipeline. Each two foot thick slab will be 28 feet wide by 40 feet in length placed on top of a layer of polystyrene. The three to four foot deep soldier beams at each end of the slab will absorb the weight of the equipment as it crosses the aqueduct.

Proper drainage control will be maintained in the borrow/stockpile areas. Surface water control features will include grading of the flatter deck areas to promote lateral runoff of precipitation into drainage control facilities such as downdrains and bench drains on the slopes. Surface waters will be conveyed from the borrow/stockpile areas and discharged into the existing natural drainage courses. The primary sediment control measures that will be implemented within the borrow/stockpile areas include track walking of all disturbed surfaces in conjunction with straw

[4] The existing grades around the perimeter of Borrow/Stockpile Area A range from about 320 to 400 feet.

[5] The existing grades around the perimeter of Borrow/Stockpile Area B range from about 600 to 950 feet.

mulching, include the use of hay bale dikes, sand bags bio logs and sediment filter dikes. The erosion control measures which will be conducted concurrent with sediment control will include track walking of all disturbed surfaces in conjunction with straw mulching and seeding of native plant species continued until native vegetation establishment reaches 70 percent of the pre-development state. Secondary sediment control will consist of desilting basins. Energy dissipating measures such as rip-rap will be utilized to reduce downstream siltation potential as well as discharge velocities to the natural drainage courses. Discharge rates will be equal to or less than natural flow conditions.

Borrow/Stockpile Area B will drain to the southwest into a natural drainage course. The drainage course for Borrow/Stockpile Area A runs northwesterly. The drainage control facilities will direct the surface runoff into the existing streams. At the western end of the Borrow/Stockpile Area B, a desilting basin will be constructed to minimize the flow of silt from the borrow/stockpile area. These desilting basins will be designed to accommodate the soil loss from the borrow/stockpile areas.

The pre-developed drainage condition of the proposed borrow/stockpile areas will be maintained as closely as possible once operations are discontinued. As discussed above, exposed areas will be revegetated with native plant species to prevent erosion. Construction and operation of all drainage facilities will strictly adhere to the BMPs developed as part of the Stormwater Pollution Prevention Program Plan (SWPPP). The SWPPP is required to comply with State and Federal regulations under the National Pollutant Discharge Elimination System (NPDES) program. The NPDES permit encompasses all federal guidelines regarding the discharge of stormwater.

3.2.3 ACCESS ROAD AND BRIDGE

The project includes modifications to SR 76 at the access road entrance to improve sight distance and to facilitate truck movements (Exhibit 3-6). The improvements, which are approximately 1,700 linear feet, will realign SR 76 to the south of the existing alignment. In addition, the improvements will widen the roadway to 52 to 64 feet to provide for an eastbound deceleration lane and a westbound left turn lane.

The proposed access road from SR 76, which will extend through the abandoned Lucio dairy to the ancillary facilities area, will be two to three lanes and will include a bridge over the San Luis Rey River. The access road from SR 76 to the bridge will be about 910 linear feet and will be 32 feet wide, with two twelve-foot travel lanes and a four-foot shoulder on each side. The access road from the bridge into the ancillary facilities area will be about 985 linear feet and will be 36 feet wide, with three lanes (two travel lanes and a center lane) with a four foot shoulder on each side. The access road will be paved with asphalt curbs.

As it enters the ancillary facilities area, the access road will cross over the existing First San Diego Aqueduct. Two reinforced concrete slabs will be placed at grade, one centered over each pipeline. Each approximately two foot thick slab will be 26 feet wide by 64 feet in length placed on top of a layer of polystyrene. The three to four foot deep soldier beams at each end of the slab will absorb the weight of the vehicles crossing over the aqueduct.

A bridge, approximately 640 feet in length, with five sets of two piles each (for a total of ten piles) which will form the base of the structure, will be constructed across the San Luis Rey River (Exhibit 3-7). The 35.5-foot wide bridge will have two travel lanes. The bridge will maintain 17.5-foot clearance between the proposed finished channel bottom and the underside of

LEGEND:

Proposed Alignment, Highway 76

Existing Alignment, Highway 76

EXISTING ALIGNMENT

PROPOSED ALIGNMENT

FUTURE ACCESS ROAD

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Source: Nolte and Associates, Inc., 1999

Exhibit 3-6

Existing/Proposed SR 76 Alignment

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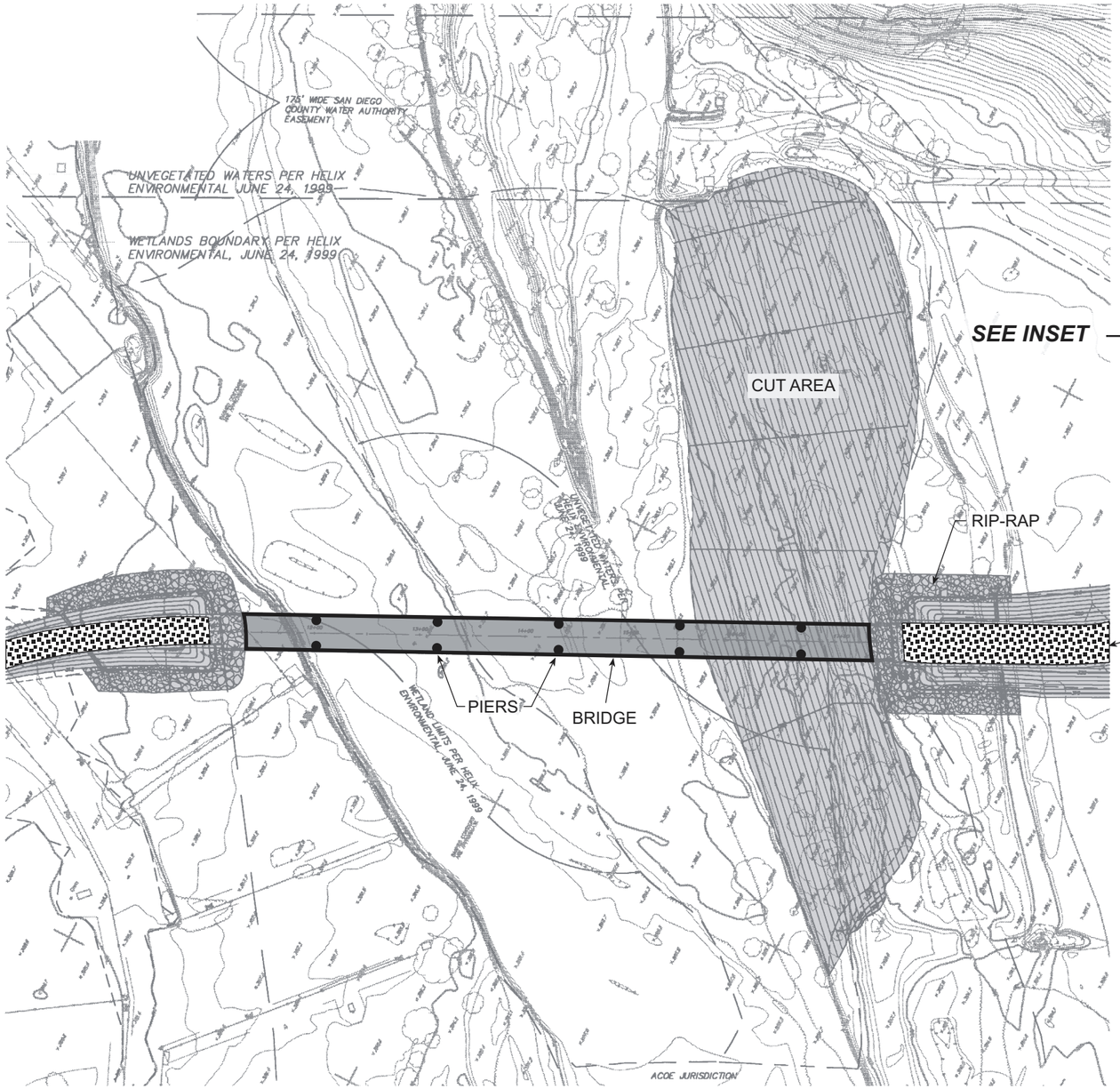

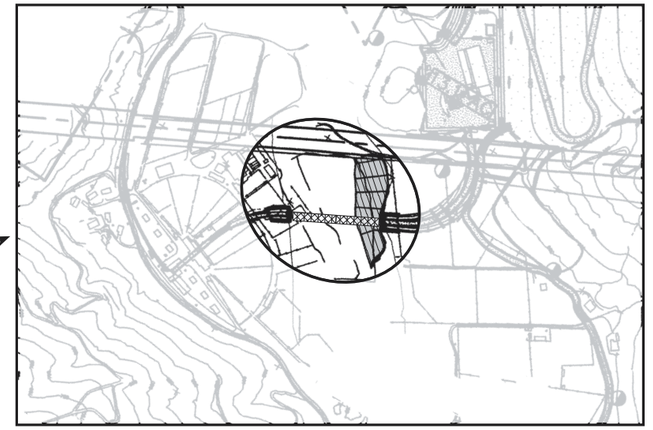

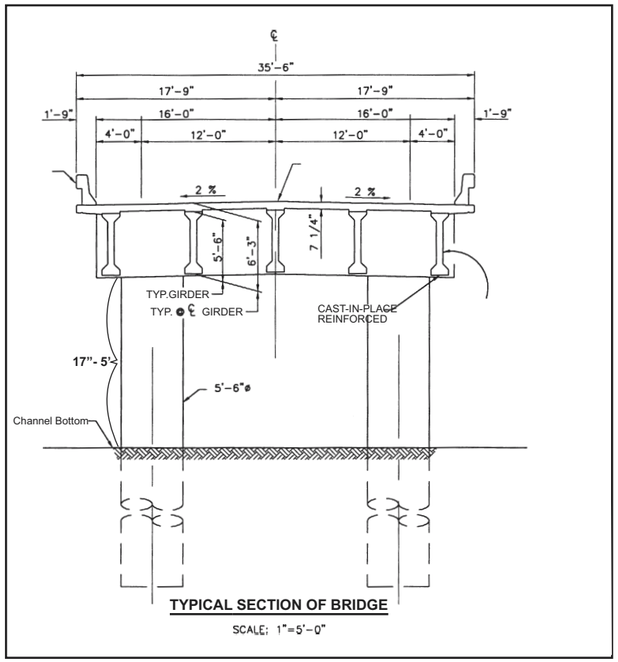

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0 200 Feet

Source: Nolte Associates, 1999

Exhibit 3-7
Bridge and Channel Excavation

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the bridge. The side slopes at the end buttresses (or abutments) will be at a 3:1 slope and stabilized with rip rap to prevent erosion of the bridge abutments. Reflective strips will be used on the inside structure of the bridge to guide vehicles safely across during early morning and early evening hours. No overhead lighting will be installed on the bridge.

3.2.4 ANCILLARY FACILITIES

Upon entering the ancillary facilities area, vehicles will pass through the fee booth and scales (Exhibit 3-8). The administrative office building will be located adjacent to the booths. The ancillary facilities area will also include an approximately 7,000 square foot maintenance building, which will be a tilt up concrete structure, approximately 30 feet in height. A diesel storage tank within a concrete containment wall will be located on the south side of the building for refueling of equipment. A portable emergency showerhead designated to contain rinse water[6] will also be provided outside the maintenance building.

A recyclable drop-off area is proposed on the east side of the maintenance building. The recyclable area will have bins for drop-off of source separated recyclable material, such as newsprint, white paper, tin, aluminum, and glass.

Hazardous materials will be prohibited at Gregory Canyon Landfill. However, a hazardous materials storage area, located in the southeastern portion of the ancillary facilities area, will be maintained for use if such materials are found in loads coming to the landfill. A full time spotter will observe unloading activities during all refuse hours of operation. The load checking program is discussed in Section 3.4.4.

Two 10,000-gallon leachate holding tanks and one 10,000-gallon subdrain water tank will be located in the southwestern corner of the ancillary facilities area. A 20,000 gallon water tank will be located just north of the paved area. The water tank will be supplied from on-site groundwater wells. The site will comply with a General Permit to Discharge Stormwater Associated with Industrial Activities (see Section 3.8.4). A Notice of Intent (NOI) for industrial activities will be submitted to the RWQCB concurrently with the application to obtain WDRs for the project. Within the ancillary facilities area the project will implement dry management controls of sediment (i.e., sweeping) as well as the use of absorbents for oil and gas releases. The project will also include a storm drain inlet or outflow device from the ancillary facilities area (e.g., oil-water separators or other filtering devices required by the County stormwater discharge requirements) to protect surface water quality. A 50 gallon per minute (gpm) reverse osmosis (RO) system will be installed in the southwestern portion of the ancillary facilities area as stipulated in an agreement with the San Luis Rey Municipal Water District and the applicant (Appendix C). As indicated in Section 3.5.2.3, the RO system will provide a groundwater treatment facility for use in the event that groundwater impacts are identified. Please see Section 3.5.2.3 for further discussion of the RO system.

Electricity will be used in the ancillary facilities area for the scales, buildings, and lighting. Telephone service will be provided within the offices in the facilities area and at each of the fee

[6] The wastewater from the shower will be disposed of off-site at a hazardous waste facility or taken to a wastewater treatment plant, depending on the nature of the contaminate

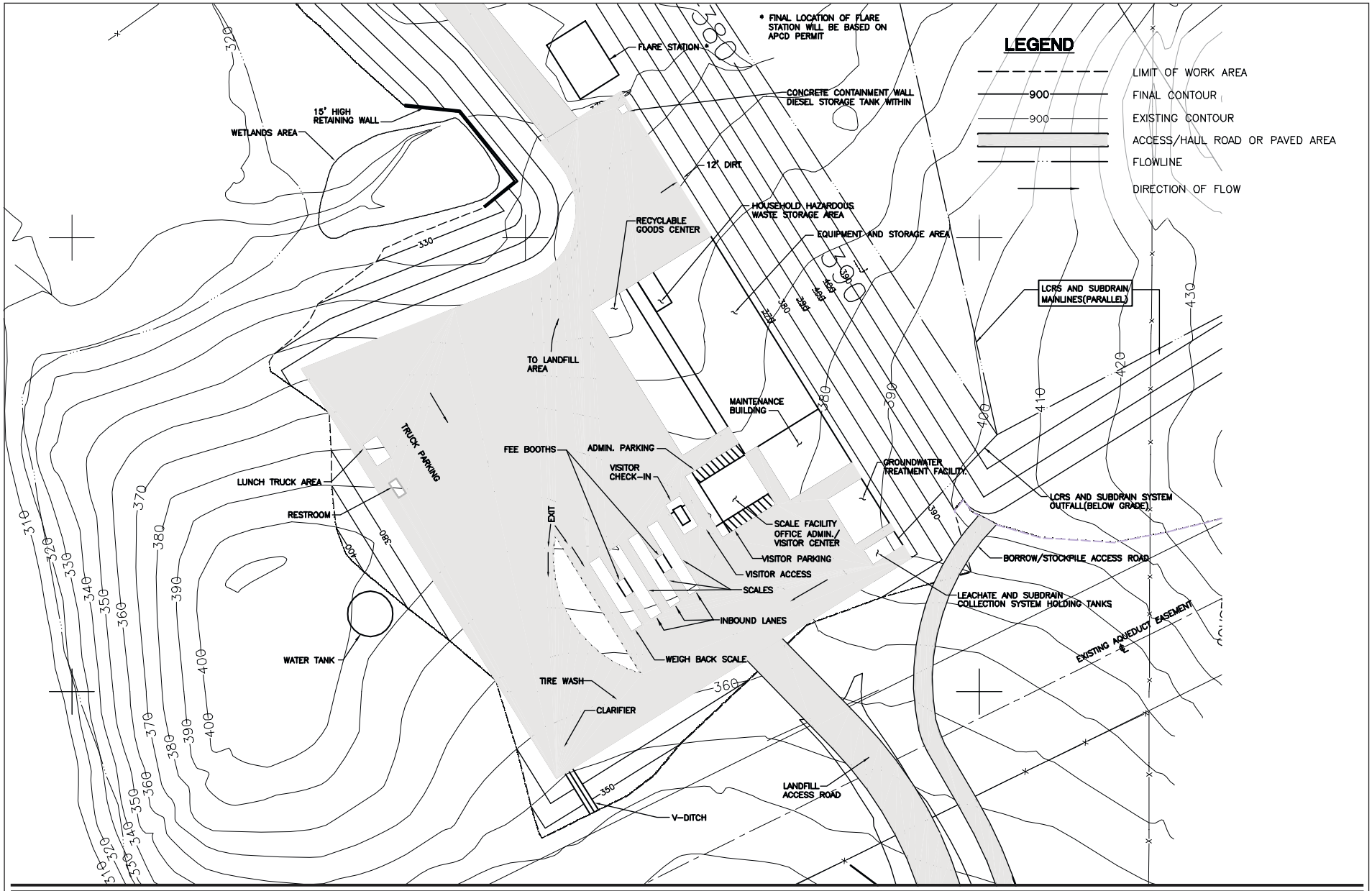

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Exhibit 3-8
Ancillary Facilities Plan

Source: Bryan A. Stirrat & Associates, 2002

booths for computer links with the truck scales. Electrical and telephone utility connections will be undergrounded in the access road from SR 76 to the facilities area. Water will be used for various activities on site, including dust suppression. Groundwater from on-site wells will be used. Bottled drinking water will be provided in the facilities area.[7] A portable chemical toilet will be located at the northern end of the ancillary facilities area.[8] The applicant will contract with a sewage disposal service to remove effluent from the chemical toilets for off-site treatment and disposal.

Security lighting will be provided around the buildings in the ancillary facilities area. Lighting will be low impact, focused, and shielded to minimize spill light into the night sky or adjacent properties. All lighting will comply with the County Light Pollution Code.

A facility identification sign will be located at the entrance gate at SR 76. The sign will provide information on the facility operator, hours of operation, and recognized holidays. Signs will be located on the scalehouse indicating the schedule of charges and the general types of waste materials that will not be accepted at the site. Additionally, posted signs will direct drivers to the refuse unloading and recycling collection areas. Other posted signs will display site safety and traffic rules.

3.2.5 OTHER PROJECT COMPONENTS

As indicated in Proposition C, the project will dedicate a minimum of 1,313 acres of the project site as permanent open space for long-term preservation of sensitive habitat and species. Exhibit 3-9 shows the proposed open space areas, which currently total about 1,325 acres. The open space area will be reduced with the future widening to four lanes of SR 76 as indicated in the County Circulation Element. As indicated in Proposition C, the open space will be dedicated to the County of San Diego, the Pala Band of Mission Indians, another public agency, or a resource conservation group selected by the applicant.[9]

In addition, as indicated in Proposition C, the project includes the relocation of a portion of the existing SDG&E transmission lines and easement because two towers are located within the proposed landfill footprint. Relocation of these facilities is proposed to the east of their existing location (Exhibit 3-10). A 300 foot easement for the existing and future SDG&E lines will be maintained. The project applicant has coordinated the proposed relocation of the towers and easement with SDG&E. An alternative relocation alignment to the west of the landfill is analyzed in Chapter 6.0, Alternatives of this EIR.

SDCWA has expressed interest in the relocation of a portion of Pipelines 1 and 2. The project applicant is discussing the relocation of a portion of the First San Diego Aqueduct with SDCWA as shown in Exhibit 3-11. The project does not include the relocation of the pipelines and the

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[7] If groundwater were to be used for potable water in the future, environmental review and permits would be completed and obtained, as necessary.

[8] If permanent restroom facilities with an on-site septic system were to be installed in the future, approval of a percolation test by DEH will be required. However, this is not proposed as a component of the project.

[9] As indicated in Mitigation Measure 4.1-2, the applicant shall convey or dedicate the open space in perpetuity to the satisfaction of the County of San Diego.

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LEGEND

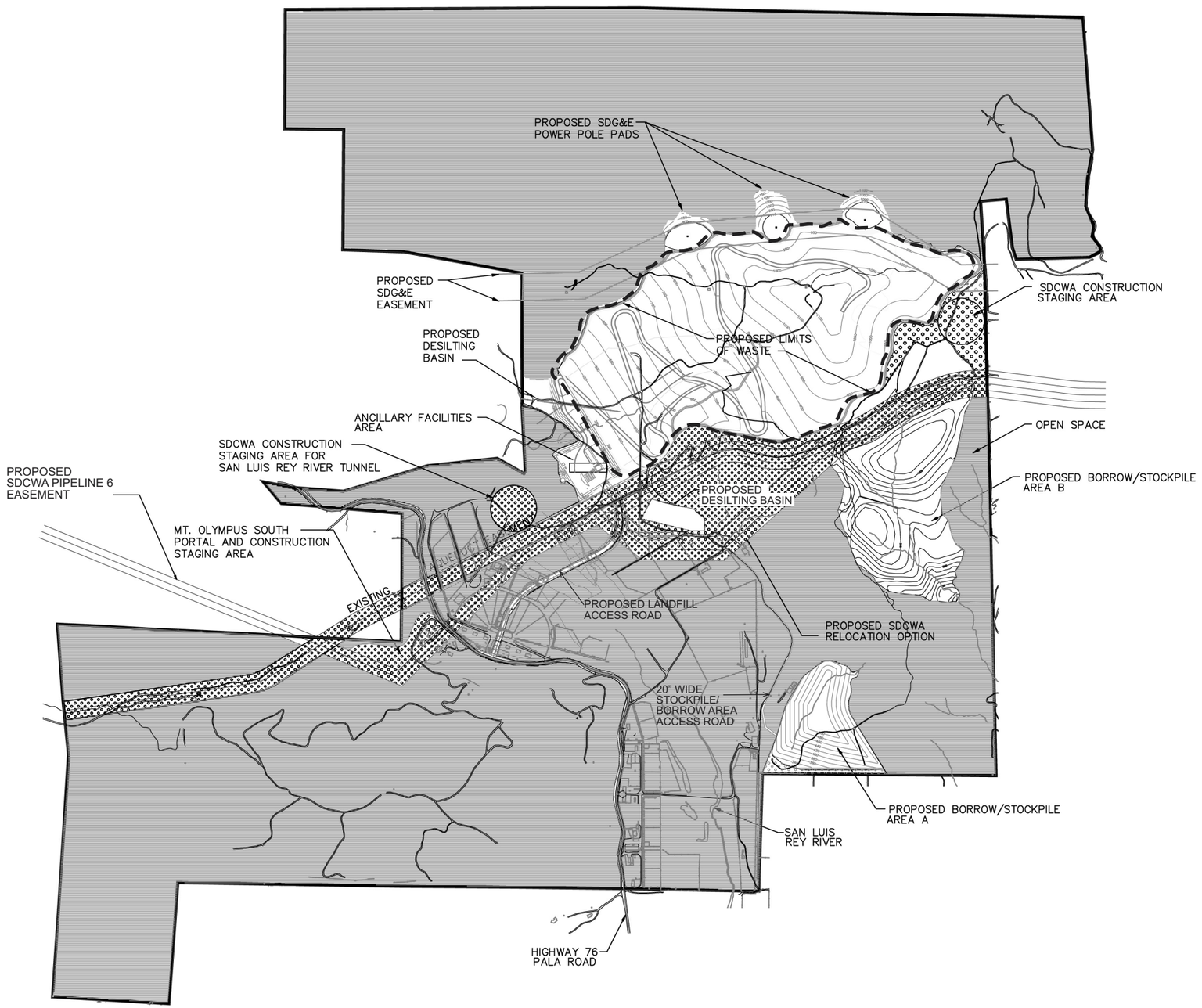
OPEN SPACE – 1324.7 ACRES

PROJECT COMPONENTS – 307.8 ACRES

OTHER AREAS/EASEMENTS – 150.5 ACRES

PROPERTY BOUNDARY

LIMIT OF WASTE



Notes: * Proposed open space totals 1,324 acres.

* Excludes areas for existing Pipelines No.1 and 2 and future Pipeline No.6. Also excludes SDCWA Relocation Option area.

N

0 1200 Feet

SOURCE: Bryan A. Stirrat & Associates, 2000

Exhibit 3-9
Proposed On-Site Open Space

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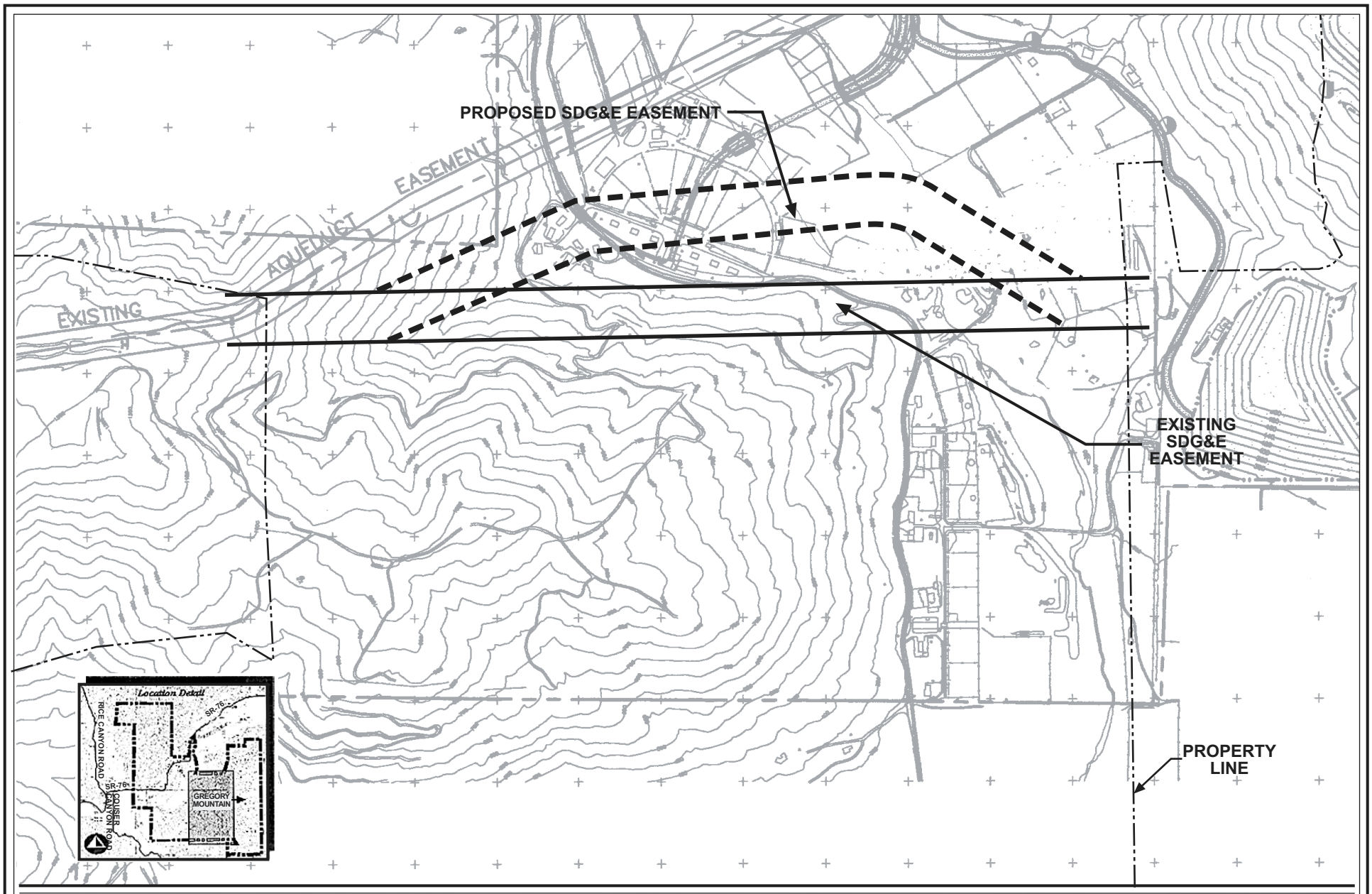

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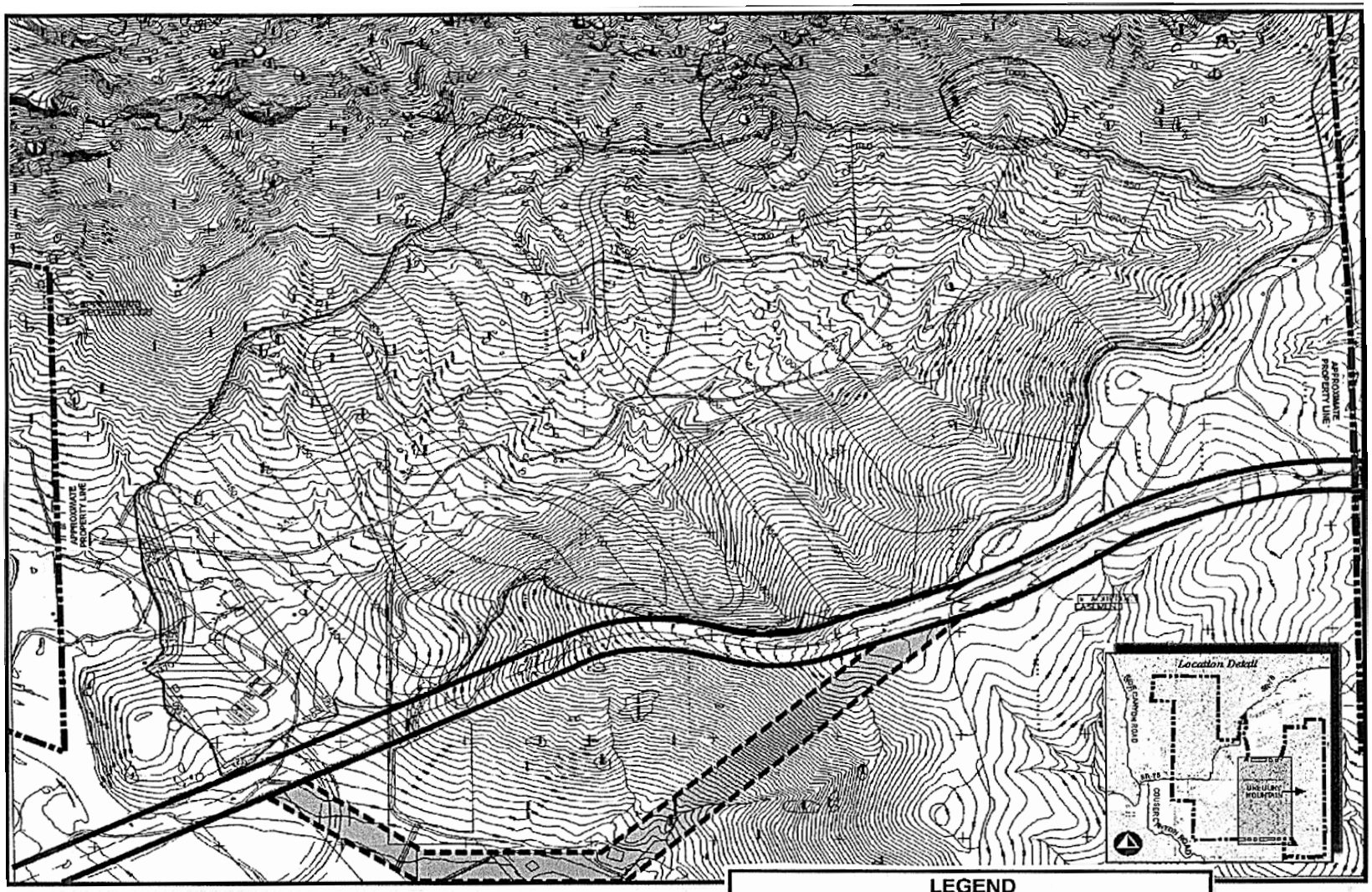
Exhibit 3-10
SDG&E Tower Relocation

Sources: Bryan A. Stirrat & Associates, 2000



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0 600 FEET

SCLAE IN APPROXIMATE FEET

Sources: Nolte & Associates, 1998; David Evans and Associates, Inc., 1999; PCR Services Corporation, 1999

Exhibit 3-11
SDCWA Relocation Option

environmental analysis assumes the pipelines remain in their current location, which represents the worst case environmental analysis. However, because of the ongoing negotiations, a project option, which is the relocation of a portion of the First San Diego Aqueduct to the west of the current location (Exhibit 3-11), is analyzed in each section of Chapter 4.0 of this EIR. Since Section 3G of Proposition C requires the protection of the San Diego Aqueduct pipelines, a condition of the SWFP and a mitigation measure will require that prior to any construction work related to the landfill, the applicant shall provide DEH with a copy of the executed agreement with SDCWA providing for the relocation and protection of the San Diego Aqueduct pipelines.

As a separate matter, Metropolitan Water District (MWD) and SDCWA have a joint future water project, the Pipeline No. 6, which will run north-south through the project site. The 1993 Metropolitan Water District (MWD) Final Environmental Impact Report for Pipeline No. 6 analyzed a one-mile wide corridor through the site. The preferred alignment would locate Pipeline No. 6 to the west of the First San Diego Aqueduct. Analysis of the construction and location of Pipeline No. 6 has been included in Chapter 5.0, Cumulative Impacts of this EIR.

In 1996, the Gregory Canyon Landfill Agreement was executed by the proponents of the Gregory Canyon Landfill, San Luis Rey Municipal Water District (SLRMWD), and several private landowners located downstream of the landfill project (Appendix C). The purpose of the agreement is to ensure that the construction, operation, and closure of the Gregory Canyon Landfill project are carried out in a manner that will protect the Pala Basin of the San Luis Rey River and the water quality downgradient basin areas. Provisions outlined in the landfill agreement include stipulations, which address the protection of water supply, water rights, groundwater monitoring, liability, and closure. A reverse osmosis (RO) system for the treatment of collected waters is also included in the ancillary facilities area in accordance with this agreement. (Please see Section 3.5.2.3 for a description of the RO system.)

3.3 CONSTRUCTION

This section describes the initial construction phase as well as other construction activities that could occur during initial construction as well as after initial construction is complete and the landfill is operational.

3.3.1 INITIAL CONSTRUCTION

Several activities, which are considered the initial construction phase, are necessary to prepare the site and the landfill for operation. The initial construction of the project includes:

- Removal of the existing dairy buildings and residences on the site
- Removal of the manure to minimize or eliminate odors and/or potential impacts to water quality
- Construction of the access road and bridge
- Improvements to SR 76 at the access road
- Excavation of the river channel
- Construction of the ancillary facilities, including the scalehouses, maintenance building, water tank, and desilting basins
- Installation of the leachate and subdrain water storage tanks and the reverse osmosis system
- Excavation of approximately 25 acres of Phase I of the landfill footprint, including the excavation of rock and crushing with a portable crusher. (Please see Section 3.3.2 for a

description of rock crushing.) Any excess rock could be exported off-site, if a Major Use Permit (MUP) were obtained. (Please see Section 3.8 for a discussion of permits.) Initial Construction may require on-site blasting to fracture the underlying rock structure and ease the removal of and access to final footprint elevations. However, given the existing topography and geologic conditions, minimal blasting is anticipated during this phase of project construction.

- Installation of the subdrain system, leachate collection and removal system (LCRS) and composite liner within the excavated area
- Preparation of the Borrow/Stockpile Area A
- Clearance and grading of turnouts along the internal haul road between Borrow/Stockpile Area A and the landfill footprint
- Installation of monitoring wells[10]

The initial construction period will be approximately nine to twelve months in duration.

Construction equipment and deliveries will be brought into the site over the existing river crossing, which is currently used for the dairy operation, at the western end of the site. The construction equipment will cross the river using the temporary crossing and will remain on the south side of the river. The equipment will pass the existing Verboom residence and connect with the internal haul road near the Borrow/Stockpile Area A. Turnouts along the internal haul route will be created as shown on Exhibit 3-3 to allow equipment traveling in an opposing direction to pass.

The first activities for the landfill itself will be the excavation of the footprint and the grading for the ancillary facilities area. Rock material will be processed in the southwestern portion of the defined landfill footprint and will be used in the construction on site, stockpiled for future use, and any excess could be transported off-site, if a MUP were obtained (please see Section 3.8). However, the borrow/stockpile areas are sized to accommodate the storage of all excavated material on site.[11] As the excavation of the footprint is complete the materials for the LCRS, subdrain system, and clay liner will be brought onto the site.

Materials and supplies necessary for the construction of the initial refuse area will be brought to the footprint area either using the temporary river crossing or the permanent bridge once the bridge is complete. The temporary crossing will be removed once the permanent bridge is available for use.

The bridge construction will occur simultaneously with the footprint and facilities area, beginning with the removal of habitat. The access road and improvements to SR 76 at the access road will also be constructed during the initial construction phase. The construction period for

[10] Of the 17 wells in the monitoring system, only well GLA-18 cannot be constructed prior to landfill operation because of the steep and currently inaccessible location. This well will be constructed following grading of the electrical utility pad as part of relocation of the transmission lines. See Section 3.5.2.3 for a detailed discussion regarding monitoring wells.

[11] The environmental analyses have been completed assuming a worst-case scenario with regard to rock excavation, crushing and exportation. For example, with regard to traffic, a worst-case scenario would be if the rock were exported since exportation would increase the number of truck trips. With regard to aesthetics, the worst-case scenario would be the storage of the material on site, since this would result in the full use of the borrow/stockpile areas.

the permanent bridge crossing the San Luis Rey River will be approximately six months during the initial construction phase, depending on when construction begins and the weather conditions during construction. A construction zone will be established beneath and adjacent to the bridge deck, which includes the bridge footprint and 50 feet to one side of the bridge. The vegetation within the construction zone will be removed. The bridge pilings will be cased-in-drilled holes.[12] The bridge deck will be laid with cranes located in the construction zone.

Construction of the access road and bridge includes minor excavation in the southern portion of the river up and down stream of the bridge structure but the channel will remain in its natural state. The excavation will maintain the river bottom's grade at or below the existing 100-year flood elevation. The excavation will create a more consistent bottom elevation of the river to improve the river flow. The channel excavation and bridge pile construction will result in the removal of approximately 16,000 cubic yards of material. The excavated material will be stockpiled on site within the landfill footprint.

The construction crew will be approximately 30 to 40 people for the bridge and the landfill footprint and ancillary facilities. Best management practices for erosion control include erosion control blankets, straw wattlesand re-vegetation with native plant species. Sediment control will include silt fences, coir logs, straw/hay bales and landfill grading such as earthen berms. All of these measures will be used as appropriate during construction. In addition, secondary sediment control will be the desilting basins. Vehicle maintenance and fueling will not occur near any natural or manmade drainage courses. Equipment will be inspected daily for leaks and necessary repairs will be made.

3.3.2 OTHER CONSTRUCTION ACTIVITIES

As described in Section 3.3.1, Initial Construction, only a small portion (about 13 percent) of the entire refuse footprint will be excavated and prepared to accept waste during the initial construction phase. The amount of area developed to accept waste is limited so as to avoid disturbance to all of the land at one time. After completion of the initial construction the facility will open and begin to accept waste. The first cell of Phase I will accommodate about one million tons of waste. Excavation and preparation of the next area will begin before the first cell is completely filled with waste. The size of the next cell will be dependent on the current and projected volume of the waste received. Therefore, during the operational life of the project there will be times that construction occurs to excavate and prepare the next cell simultaneously with the landfill operation.

As in the initial construction, during periodic construction, material will be excavated from the footprint of the landfill utilizing mobile equipment such as scrapers and loaders, with deeper deposits generally requiring some drilling and blasting to loosen the material. On-site blasting could occur two days per week for a six to eight month period under a potential worst-case scenario. This cycle would be repeated every one to five years. Excavated material will be delivered to the processing plant, which is located within the footprint of the landfill, by truck and dumped into a hoppered feeder. The feeder separates large boulders from finer rocks that do not require primary crushing, thus reducing the load to the primary crusher. The crusher product

[12] Holes are drilled (no pile driving), a form installed inside and above the hole, and concrete poured into the hole.

is then passed through a scalping screen that further separates the product stream. The material that is too large to pass through the top deck of the scalping screen is processed in the secondary crusher. The output from the secondary crusher and undersized material will be transported to on-site stockpile areas for future daily cover. Alternatively, the rock material could be transported off-site for sale as crushed rock, base rock, and construction-grade material if a MUP were obtained.[13] (Please see Section 3.8.)

There are some construction related activities that could occur at various times and are therefore, not necessarily a part of initial construction. These include: 1) the removal of rock outcrops along the slope of Gregory Mountain; and 2) installation of a diversion structure below an existing hanging basin. For boulder removal, all boulders upslope of the landfill footprint will be left in place unless it appears that a boulder may be insecure. All boulders 24 inches in size and greater will be inspected by designated site personnel prior to development of any area of the landfill. In addition, prior to any on-site blasting, a qualified geologist will identify areas of potential rockfall concern. Any removal of boulders will meet the requirements under 8 CCR, Division 1, Chapter 3, Section 1541. The identification and removal of loose boulders located within the landfill footprint and directly surrounding and upslope of the landfill footprint in accordance with these requirements will reduce rockslide hazards. Physical force will be applied to the boulders using pry bars or cables and heavy equipment. Any loose boulders that are identified will be wrapped in a netting material and moved with landfill heavy equipment to flatter ground within the refuse footprint area for processing. Larger, heavier boulders will be wrapped in steel netting to reduce the potential for tensile failure of the net. Cables will be attached to the net to apply a constant tension to balance the load and to allow the controlled movement of the boulder down slope in a safe manner. In addition, as the phases of development move up canyon a spotter will be stationed up-gradient of the construction area to observe for falling rocks/boulders. The spotter will provide an early warning of rockslide. In addition, if warranted, rockfall restraining nets can also be used.

A second activity that could occur as discussed in Section 4.2, Geology and Soils, is the use of a diversion structure, such as a gabion dam, to prevent potential debris flow or rockslides onto the landfill footprint from the hanging basins in the upper slopes of Gregory Mountain. (Use of gabion structures is recommended in the Caltrans Highway Design Manual to prevent debris flow.) A gabion is a large steel wire mesh basket, typically 6 to 12 feet in length and 3 feet in height and width, filled with stone. The wire baskets will be filled in the footprint area using rock excavated on site. The baskets will be rigged to a helicopter to be transported upslope. The rock-filled baskets will be wired together to create an embankment or retaining wall. The construction of the gabion containment structures or the installation of rockfall restraining nets will not occur during December through May to avoid the golden eagle breeding season.

[13] If excess rock were shipped off-site under a MUP, the rock would be taken to an existing redimix plant located in Escondido, San Marcos, or Vista.

3.4 OPERATIONS DESCRIPTION

This section describes the operation of the proposed landfill. Operation includes acceptance of refuse and periodic construction that occurs to excavate and prepare the next cell simultaneously with the landfill operation.

3.4.1 WASTE SOURCE, TYPES AND VOLUME

The proposed landfill will be permitted and operated as a Class III municipal solid waste landfill, in accordance with Title 27 of the California Code of Regulations (27 CCR). As a Class III landfill, only non-hazardous solid wastes and inert wastes will be accepted. Non-hazardous solid and inert wastes include all putrescible and non-putrescible solid and semi-solid wastes, including household refuse, paper, rubbish, ashes, commercial wastes, industrial wastes, demolition and construction wastes, tires, vehicle parts, manure, animal solids, dewatered sewage sludge, and other solid or semi-solid waste, provided that such wastes do not contain wastes that must be managed as hazardous wastes, or wastes that contain soluble pollutants in concentrations which exceed applicable water quality objectives, or could cause degradation of waters of the state.

Inert waste (e.g., asphalt or concrete) that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives, and does not contain significant quantities of decomposable waste will be accepted. Green and wood waste will also be accepted, but not processed (i.e., shredded or mulched) on the site. Non-hazardous asbestos will not be accepted at the landfill. Materials will be reused on site, if possible. For example, inert materials may be used for the construction of a winter deck area and for maintenance of the internal roads and drainage control facilities on the landfill. Processed green material (PGM) may be used as Alternative Daily Cover. The reuse of materials, such as PGM and inert waste, will contribute to the County's achievement of AB 939 diversion goals. Please see the discussion regarding Alternative Daily Cover in Section 3.4.5.1.

The proposed Gregory Canyon Landfill will provide a waste disposal facility for San Diego County residents. Based on growth projections for the County, the Gregory Canyon Landfill is designed to accommodate one million tons of solid waste annually (Appendix D), with fluctuations in the daily inflow rates of 3,200 tons per day (tpd) to 5,000 tpd.[14] The environmental analysis in Chapter 4.0 assumes a worst case of 5,000 tpd.

3.4.2 TYPES AND NUMBERS OF VEHICLES ANTICIPATED TO ENTER THE FACILITY

While the site will be open to the public for the delivery of waste, virtually all of the waste will be delivered to the site by commercial refuse vehicles (e.g., collection trucks and/or transfer trailers). The projected maximum traffic volume is estimated to be 675 eight-ton refuse and construction trucks (i.e., trucks necessary to import clay liner material) or 2,025 passenger car equivalents per day (see Section 4.5, Traffic and Circulation). In addition to refuse and construction trucks, employee, service, or visitor vehicles, including private vehicles delivering waste, will access the site for an additional 60 trips per day.

[14] The Solid Waste Facilities Permit will be issued specifying a daily and annual tonnage cap. The analysis contained in this document is for the maximum daily intake of 5,000 tpd.

The general types of refuse and private vehicles accessing the site are anticipated to include, but not be limited to:

- 3-axle trucks and vans
- Personnel transportation vehicles
- 4-axle refuse collection packer trucks
- Private vehicles—automobiles and pick-up trucks
- 10-wheel dump trucks
- Transfer station 18-wheel, tractor-trailer trucks
- Belly-dump tractor-trailers
- Equipment service and maintenance vehicles
- Fuel transportation vehicles

3.4.3 DISPOSAL OPERATIONS

The Gregory Canyon Landfill will be operated utilizing the canyon and area fill method for refuse placement. This method of refuse disposal includes the excavation of a large area, the stockpiling of the excavated soils, construction of the waste containment or liner system and finally the placement of refuse. Exhibit 3-12 depicts a typical landfill operation cross-section for refuse placement with disposal activities conducted behind the front face or berm of the landfill. Refuse is typically placed in lifts up to approximately 20 feet high and from 100 to 200 feet in length. Each lift is constructed to create a series of adjoining cells. The process of constructing the lifts is repeated until the desired grades, both interim and final, have been reached. At the end of the working day, the refuse will be covered with soil or an alternative daily cover (ADC) as allowed under 27 CCR, which will then be compacted by using a dozer or compactor to complete the cell.

3.4.3.1 Refuse Unloading Operations

Vehicles with refuse loads will arrive at the landfill via the access road and bridge. At the entrance facility, two fee booths (also known as scalehouses) will handle four scales (three for in-bound traffic and one for weighing out-bound traffic). The fee booths handle weighing of the vehicles and payment for disposal of the loads. Additional lanes will be available for visitors and administrative and operations personnel to enter and exit the landfill (Exhibit 3-8).

Upon acceptance of waste for disposal at the scalehouse, scalehouse staff will direct vehicles to the working face of the landfill. From the entrance area, vehicles will travel to the unloading area using paved and/or tightly compacted dirt access roads. The unloading area will always be located adjacent to the active face or area where refuse is being actively buried. Signs will be posted along the internal access roads to guide customers to the designated unloading areas.

The size of the daily working face will vary to accommodate actual inflow rate conditions and unloading of waste during the operating day. Based on the average daily inflow rate of 3,200 tpd, the size of the working face will cover a maximum area of approximately 100 feet wide (from bottom to top) by 200 feet long (from side to side).

Commercial refuse vehicles (i.e., collection trucks and/or transfer trailers) will be directed to the working face. Private vehicles (i.e., automobiles and/or pick-up trucks), if any access the site, will be directed to a separate tipping area away from the commercial vehicle unloading area. Separate commercial and private vehicle tipping areas reduce safety concerns for customers,

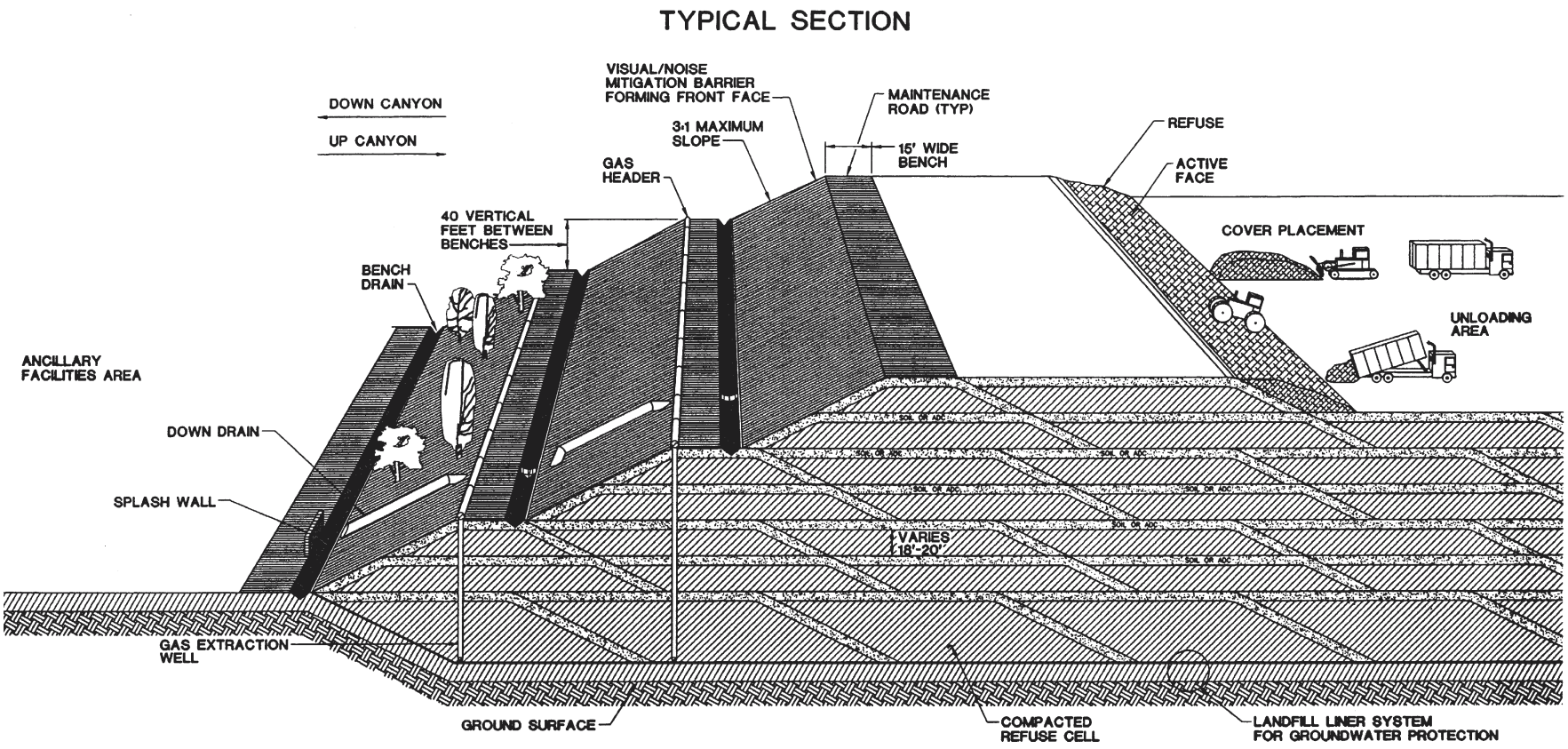

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Exhibit 3-12
Typical Landfill Operation Cross-Section

Source: Bryan A. Stirrat & Associates, 1999

allow for better inspection of the refuse loads to detect prohibited materials, and expedite unloading for the commercial refuse vehicles.

Landfill staff stationed at the unloading areas continuously observe the refuse as it is being unloaded to monitor for prohibited wastes. Once refuse is disposed in the unloading areas, a compactor or dozer will push the waste to the working face. The refuse will then be spread over the working face in two-foot thick layers followed by a compactor or dozer, which will make repeated passes over the working face to compact the refuse. The working face will generally be sloped to a gradient of 5:1 (horizontal to vertical) or less to achieve maximum refuse compaction. All refuse will be spread and compacted in this manner to minimize voids in the daily refuse cells, to inhibit the propagation of vectors, to reduce windblown litter, and to maximize site capacity. Large, bulky wastes may be separated to prevent bridging of the surrounding refuse, or may be placed in the lower portion of the advancing lift to be thoroughly crushed by the landfill compactor.

3.4.3.2 Inclement Weather Operations

Rain and/or high winds are the predominant inclement weather conditions experienced in Southern California which may cause the operator to adjust on-site waste handling and disposal procedures. When heavy rains cause the unloading area to become muddy and unusable, operations will be moved to a designated wet weather area, generally near an improved internal road. This area will typically be improved by tightly compacting the underlying soils or through placement and compaction of construction debris, to allow the operator to provide continuous operation during inclement weather. Stockpiles of soil material will be maintained near the designated alternative unloading area to ensure that an adequate supply of soil material will be available to cover all wastes.

When high wind conditions occur, the unloading areas (commercial and private) will typically be reduced in size and, whenever possible, placed in a portion of the facility that affords protection from the wind. Additional equipment may be utilized to expedite the spreading and compacting of the refuse as soon as it is unloaded. Cover operations may also begin earlier in the day to reduce the area of exposed waste on the working face. Portable litter fencing may also be used downwind around the unloading areas.

3.4.4 HAZARDOUS WASTE EXCLUSION PROGRAM (HWEP)

Although hazardous wastes will not be accepted at the proposed Gregory Canyon Landfill, some household hazardous materials may be inadvertently brought to the landfill. State and Federal regulations require landfill operators to have programs to handle hazardous wastes. For purposes of this discussion, "regulated hazardous waste" means "a solid waste that is a hazardous waste, as defined in 40 CFR 261.3, that is not excluded from regulation as a hazardous waste under 40 CFR 261.4(b) or was not generated by a conditionally exempt small quantity generator as defined in 40 CFR 261.5."

The HWEP for the Gregory Canyon Landfill is proposed to complement the load checking program (Section 3.4.4.1) and comply with the state regulations under 27 CCR, Sections 20220 and 20870. These regulations state that "Owners or operators of all Municipal Solid Waste Landfill (MSWLF) units must implement a program at the facility for detecting and preventing the disposal of regulated hazardous wastes as defined in 40 CFR Part 261 and polychlorinated biphenyl (PCB) wastes as defined in 40 CFR Part 761."

The purpose of the HWEP will be to discover and discourage attempts to dispose of hazardous or other unacceptable wastes, including PCBs, at the landfill. The proposed HWEP, which is included as part of the Joint Technical Document, which is on file at County DEH and County Department of Planning and Land Use contains the following major components:

- Descriptions of acceptable and prohibited wastes.
- Installation of a gamma-scintillation counter at the scale facility to detect radioactive materials.
- Random inspections of incoming loads unless the owner or operator takes other steps to ensure that incoming loads do not contain regulated hazardous wastes or PCB wastes.
- Record keeping of any inspections.
- Training of facility personnel to recognize regulated hazardous waste and PCB wastes.
- Notification of the California Department of Toxic Substances Control (DTSC), the Local Enforcement Agency (LEA), the County of San Diego DEH Hazardous Materials Management Division (a delegated agent for the DTSC) and San Diego Regional Water Quality Control Board (RWQCB) if a regulated hazardous waste or PCB wastes are discovered at the facility.

Unsuitable wastes identified through the HWEP will be handled as follows:

- If the wastes pose an immediate risk to health, safety and/or the environment, site personnel will notify the emergency response unit of the Hazardous Incident Response Team (HIRT), a joint powers authority (JPA) entity administered by the City of San Diego and the County Department of Environmental Health. The generator of the hazardous waste is responsible for cleanup and if the generator cannot be identified, then the landfill operator is responsible. The wastes will be transported by a licensed hazardous waste hauler for disposal at a permitted hazardous waste treatment and disposal facility.
- If wastes are in adequate containers and can be safely handled, waste will be stored on-site in the designated area to await proper disposal by a licensed hazardous waste hauler/recycler or, if the hauler who brought the waste can be identified, the hauler will be asked to remove the waste.

The designated hazardous waste storage area will be located in the southeast corner of the ancillary facilities area (Exhibit 3-8) for the temporary disposition of wastes collected as part of the HWEP program. This area will be specifically designed for the handling and storage of hazardous wastes, including secondary containment and approved storage containers which are safe and convenient for storing identified wastes.

On-site hazardous waste storage will be limited to 90 days or as required by applicable state laws and regulations prior to being transported to a permitted treatment, storage and disposal facility. The "Accumulation Start Date" on the California hazardous waste label of each overpack drum containing hazardous waste will be monitored on a regular basis. Prior to shipment off site all materials will be overpacked and manifested with a licensed hazardous waste hauler/disposer.

3.4.4.1 Load Checking Program

As previously discussed, refuse unloading activities will be continuously observed through the use of a full time spotter located at the tipping area. In addition, all landfill personnel will be trained to spot hazardous wastes which may be inadvertently contained within incoming refuse loads. As part of the overall hazardous waste exclusion program the operator will also, on a

regular basis, randomly select a commercial load for a detailed load check. The driver of the load will be asked to tip or dump the load in a flat area near the working face and away from the commercial unloading area. Designated landfill personnel will then inspect, search, and sort through the load looking for prohibited wastes. If no prohibited waste are observed a dozer will push the load to the working face. If prohibited wastes are observed, the area will be corded off and the operator will follow the procedures outlined in the HWEP discussed above.

The Gregory Canyon Landfill load checking program is designed to identify and remove hazardous and prohibited wastes from the municipal waste stream coming to the landfill, in accordance with the requirements of 27 CCR, Section 20870 and the Waste Discharge Requirements (WDRs) for landfills. (The loadcheck program will evaluate all waste that is prohibited by the WDRs and the SWFP.) Specific components of the program include:

- Customer notification by signs, notices and verbal inquiries.
- Surveillance through visual inspection of waste loads and questioning of customers by scalehouse personnel.
- Waste inspection conducted on randomly-selected loads at the working face.

A load inspector will be responsible for performing random, comprehensive load checks. Landfill staff assigned the duties required in the waste load checking program, including visual inspection of the working face, will be formally trained to recognize suspicious or potential containers of hazardous waste and to perform the reporting requirements of this program including recordation of license numbers, vehicle descriptions, and names of the responsible party.

All hazardous materials will be removed immediately if observed during unloading and returned to the customer or appropriately stored. The procedures outlined above are intended to prevent haulers from unlawfully disposing of hazardous wastes at the landfill. If hazardous wastes and the hauler associated with the hazardous waste are identified, the hauler is responsible for the cleanup of any spill.

3.4.5 COVER

3.4.5.1 Daily Cover

The purpose of a daily cover is to provide a suitable barrier to the emergence of flies, prevent windblown litter and debris, minimize the escape of odors, prevent excess infiltration of surface water, (either running onto the site or from precipitation) and hinder the progress of potential combustion within the landfill. Typically, soil is used as the daily cover material which is placed over all exposed refuse at the end of each operating day to a minimum compacted thickness of six-inches. Cover material will be transported by scrapers to the working face where it will be spread and compacted by either the scrapers or a dozer.

Assuming a 4:1 cover ratio, approximately 12.4 million cubic yards (mcy) will be needed for operations during the life of the landfill.[15] The proposed landfill development will include the excavation of approximately 9.8 mcy of topsoils, alluvium/colluvium or weathered bedrock from

[15] An additional 1.83 mcy of soil will be needed for the containment system (0.63 mcy) and the final cover (1.2 mcy).

within the landfill footprint that can be used for cover material.[16] Excavated colluvium and weathered bedrock material will be stockpiled for use during the operation and closure of the landfill and the excess will be transported off-site for sale. Based on drilling conducted on the site, approximately 40 percent of the stockpiled 9.8 mcy of material excavated from the landfill footprint, or 3.9 mcy, could be used directly as cover material. The approximate volumes of soil material to be excavated from the Borrow/Stockpile Areas A and B are 1.3 mcy and 3.2 mcy, respectively. The entire excavated quantity will be available for cover needs since all of the material excavated from the borrow/stockpile areas will be colluvium and weathered bedrock. There would be 8.4 mcy of material available on-site for cover, or a shortfall over the life of the project of 4.0 mcy of daily cover material. This shortfall will be offset by on-site processing of rock material by mechanical means (i.e., rock crushing), weathering of material or the use of alternative daily cover (ADC). The use of ADC has been shown to reduce refuse-to-daily cover ratios from 4:1 to 7:1, or a 37.5 percent reduction of soil cover needs. The use of ADC will reduce the project demand for soil cover from 12.4 to 7.8 mcy. The additional material needed will be obtained by crushing approximately 20 percent of the harder rocky material excavated from the landfill footprint area.[17] The needed daily cover will be obtained by generating additional cover material through processing of the excavated rock by mechanical means (e.g., rock crushing) or weathering and the use of alternative daily cover (ADC) materials as discussed below.

Alternative Daily Cover (ADC)

ADC will also be used at the Gregory Canyon Landfill to reduce on-site cover demands and to maximize refuse capacity. The use of ADC has been shown to reduce refuse-to-daily/intermediate cover ratios from 4:1 to 7:1, which could reduce the on-site soil cover need by 37.5 percent. In the past site-specific demonstration projects were required for use of ADC. CIWMB recently promulgated regulations in 27 CCR for the use of ADC at Class III landfills. Site-specific demonstration projects are no longer required for the following ADC materials provided they are used in accordance with 27 CCR, Section 20690: geosynthetic fabric or panel products (blankets); foam products; processed green material (PGM); sludge and sludge-derived materials; ash and cement kiln dust materials; treated auto shredder waste; contaminated sediment, dredge spoils, foundry sands; energy resource exploration and production wastes; compost materials; construction and demolition wastes; and shredded tires, It is anticipated that synthetic tarps and PGM will be used during initial refuse disposal operations at the landfill along with soil. The JTD reflects the use of soil, as well as an ADC consisting of synthetic tarps.

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[16] Total excavation of the landfill footprint will be approximately 11.5 mcy, of which 1.7 mcy will be used as fill material for the ancillary facilities area, the SDG&E pads, and to shape the canyon for the receipt of the containment system.

[17] This will result in crushing about 1.2 mcy of rock on-site to meet the total on-site soil demand for daily and intermediate cover, containment system and final cover. The rock crushing operations (both primary and secondary) will produce a material with uniform size distribution. The material will be screened as necessary to remove larger material. The finished product may also be blended with finer earthen material obtained from the alluvial deposits within the refuse footprint and the borrow/stockpile areas. The material blending will occur as the cover is placed and then compacted with heavy equipment. The objective of these activities will be to create a daily/intermediate (and interim) cover material which meets 27 CCR requirements for minimization of surface water infiltration and provide odor, litter and fire control as well as prevent scavenging.

Synthetic tarp panels will be placed using landfill equipment and/or employees, and will be anchored along the edges and across the center of the working face. The tarp will be removed before placing additional waste. The number of panels used each day will depend on the size and location of the refuse active face and the size of the panels. Tears in the tarp will be repaired as recommended by the manufacturer. Proposed design and operations at the Gregory Canyon Landfill will provide for the diversion of surface water away from areas of active filling, thus minimizing potential contact between the proposed ADC and surface water.

PGM will be used as ADC at the project site, if feasible. PGM will be delivered to the site by the hauler in commercial trucks. Application of PGM as ADC will be in accordance with 27 CCR. In addition, inert waste, such as asphalt and concrete, that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives and which does not contain significant quantities of decomposable waste will be accepted at the project site. These waste materials may be used for the construction of a winter deck area and for maintenance of the internal roads and drainage control facilities on the landfill. The reuse of materials, such as PGM and inert waste, will contribute to the County's achievement of AB 939 diversion goals.

3.4.5.2 Intermediate Cover Placement

Intermediate cover is defined in 27 CCR, Section 20164 as cover material on areas where additional cells are not to be constructed for 180 days or more to control vectors, fires, odors, blowing litter, scavenging, and drainage. In accordance with 27 CCR, Section 20700, a minimum 12-inch thick layer of suitable cover material or equivalent (as approved by the LEA) will be placed over the top, side slopes and working face of the advancing lift, refuse cell or portions of the disposal area where no additional refuse is to be deposited within 180 days.

Alternative Intermediate Cover

Title 27, Section 20700 allows an operator to place alternative materials of alternative thickness for intermediate cover as approved by the LEA. The proposed use of an alternative intermediate cover (AIC) would require a site-specific demonstration project and approval of the Regional Water Quality Control Board.

3.4.6 OTHER OPERATIONS

Rock crushing, which will occur concurrently with landfill construction, will occur on site to facilitate the on-site movement of excavated rock. The portable rock processing facility, which will include a crusher and screens, will be located on the southwestern portion of the landfill footprint when it is needed. Crushed rock will be stored for future use, ground for use as daily or intermediate cover or for use on the internal haul roads, and any excess material could be exported off site for sale if a MUP is obtained.

Tires accepted at the site will be stored in a designated, secured area within the landfill footprint. The location will move as needed depending on the operational phase of the landfill. Tires will be stored on site in accordance with San Diego County's 1994 Uniform Fire Code, Section 1103.3.6, Outside Storage of Tires, and CCR Title 14, Section 17354. The tire storage area will:

- Not exceed 5,000 square feet of contiguous area;
- Not exceed 50,000 cubic feet in volume;
- Be less than 10 feet in height;

- Be more than 20 feet from any property line or perimeter fencing; and
- Separated from vegetation and other potentially flammable materials by no less than 40 feet.

Tires will be stored for a maximum of six months to avoid the collection of standing water, rodents, and snakes and to minimize fire hazards. A portable tire shredder will be brought on site when the allowed volumes of storage are met or at a minimum of once every six months to shred the collected tires. The shredded tires will be landfilled.

3.4.7 DAYS AND HOURS OF OPERATION

The landfill will operate six days a week, Monday through Saturday, except holidays, for a total of 307 operating days per year. (Holidays will include New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving, and Christmas.) Solid waste operations, which include the receipt, handling, and disposal of solid waste or the collection of source separated recyclable materials; cover operations; site grading and/or excavation, including controlled blasting and rock processing; and heavy equipment operations, will occur Monday through Friday between 7:00 a.m. and 6:00 p.m. and on Saturday from 8:00 a.m. to 5:00 p.m. Maintenance activities occurring within the maintenance yard or within the enclosed building, the operation of gas and leachate collection and treatment systems, and remedial activities required by a regulatory agency will not be limited to the hours of operation.

3.4.8 SITE SECURITY

Entry to the proposed Gregory Canyon Landfill during business hours will be controlled by site personnel at the entrance facility, which is the single point of public access to the site. Visitors to the site will be required to check-in at the administrative office. Unauthorized access to the site will be controlled by lockable gates on the access road on the north side of the bridge and at the ancillary facilities area, and perimeter fencing and/or topographical constraints around the landfill footprint. The borrow/stockpile areas will not be fenced.

3.4.9 PERSONNEL

The number of employees needed to operate and maintain a sanitary landfill is dependent on the hours a facility is open, the daily tonnage received, and the overall areas to be maintained. Initially, fewer employees will be needed to properly staff the landfill and staff numbers will grow as the landfill is developed and the refuse inflow rate increases. Table 3-2 lists the estimated number of employees in each job classification required during peak operation.

3.4.10 EQUIPMENT

Table 3-3 lists the anticipated equipment that will be used and maintained at the landfill during peak landfill operation. Less equipment will be necessary during initial refuse disposal operations. Equipment will be added as the landfill is developed and the refuse inflow rates increase.

The equipment listed in Table 3-3 does not include stand-by or rental equipment which will be obtained as operation constraints require.

TABLE 3-2
ESTIMATED FULL TIME PERSONNEL FOR THE LANDFILL OPERATION

NUMBER	TITLE
1	Site Manager
1	Site Engineer
1	Office Manager
1	Superintendent
3	Fee Collectors/Scale House
1	Foreman/Inspector
6	Equipment Operators/Refuse Load Inspectors
2	Laborers/Litter Collection
1	Traffic Director/Spotter
1	Teamster
2	Mechanics
20	Total
Source: Herzog Environmental, Inc., 1999	

TABLE 3-3
ON-SITE EQUIPMENT

NUMBER	DESCRIPTION
3	Cars
3	Pickup Trucks
3	Cat D-9N Dozers
2	Cat 826C Trash Compactors
1	Cat D-6 Dozer
1	Cat 140G Motor Patrol
2	Cat 627 Scrapers
1	5,000 Gallon Water Truck
1	Surge Bin
1	Mechanics Truck
1	Rock Crusher (Portable)
1	Fuel Truck
1	Saturn Mobile Tire Shredder (Model 72-46HT)
Source: Herzog Environmental, Inc., 1998	

3.4.11 OPERATING RECORD

The site engineer and administrative staff will maintain a comprehensive record of operations on site in accordance with Federal and State regulations under 40 CFR 258.29 (Subtitle D) and 27 CCR, Section 20515. The following landfilling activities will be documented and included in the operating record:

- Any location demonstration required by 27 CCR, Section 20270;
- Inspection records, training records, and notification procedures required by 27 CCR, Section 20870;
- Gas monitoring results from monitoring and any remediation plans required by 27 CCR, Section 20919;
- Closure and post-closure care plans as required by 27 CCR, Section 21780, notice of intent to close the unit as required by Section 21135, notice of certification of closure as required by

Section 21880, deed notation as required by Section 21170, and any gas monitoring, testing, or analytical data as required by 40 CFR 258.61;

- Any cost estimates and financial assurance documentation required by 27 CCR, Sections 22221, 22226, 21820 and 21840;
- Demonstration, certification, finding, monitoring, testing, or analytical data required by 40 CFR Subpart E (Sections 258.50 to 258.58); and
- Closure and post-closure care plans and any monitoring, testing, or analytical data required by 40 CFR Sections 258.60 and 258.61.

In accordance with 27 CCR, Section 20517, approvals, determinations and other requirements the LEA is allowed to make under Chapter 3, Subchapter 4 shall be documented in writing to the operator and placed in the operating record. Operating records for the site will be maintained by the operator and kept at the Gregory Canyon Landfill site administration office. These records will be available during normal business hours for inspection by authorized representatives of those regulatory agencies having jurisdiction over the Gregory Canyon Landfill.

As a component of the operating record, the "Disposal Site Records" will also be kept on site and maintained by the operator as required under 27 CCR, Section 20510. The following landfilling activities will be documented in the disposal site records in a manner acceptable to the LEA:

- Accurate record of weights or volumes.
- Records of excavation that may affect site safety.
- Daily log book or file of unusual activities, such as fires or earthquakes.
- Records of personnel training as required by 27 CCR, Section 20610.
- Copies of written notification to the LEA, the local health agency and fire authority per 27 CCR, Section 20615.
- MSWLF unit records.

3.5 ENVIRONMENTAL MONITORING AND CONTROL SYSTEMS

The Gregory Canyon Landfill will incorporate various measures designed to eliminate, minimize or identify potential environmental impacts and/or nuisances. These measures are intended to allow for safe operating procedures and protection of public health and the environment. The following environmental monitoring and control systems that are proposed as part of the project are discussed in this section:

- Landfill Gas Monitoring and Control Systems
- Water Quality Monitoring System
- Leachate Control and Monitoring Systems
- Fire Control Measures
- Vector and Bird Control Measures
- Litter Control Measures
- Odor Control Measures
- Dust Control Measures
- Noise and Vibration Control Measures

Exhibit 3-12 shows a typical landfill cross-section which includes some of these systems, as well as the typical liner and final cover systems.

In addition, Proposition C creates a mechanism for ongoing environmental review by the public, which will be established at the appropriate time. Section 5Q of the Proposition requires that the applicant establish a Citizen Environmental Review Board, which in turn establishes an environmental review team consisting of qualified personnel to monitor the operations of the landfill. The Citizen Environment Review Board "shall be established by agreement between the applicant and the cities or other governmental entities agreeing to supply waste to the project."

3.5.1 LANDFILL GAS MONITORING AND CONTROL SYSTEMS

Facilities to collect and destroy landfill gas (LFG) generated within the waste prism will be installed prior to reaching the San Diego County Air Pollution Control District's (SDAPCD) emission criteria. The LFG control system will prevent LFG from migrating into the atmosphere or through the ground to adjacent properties. All the necessary permits to construct and operate landfill gas collection and destruction facilities will be acquired in accordance with SDAPCD rules and regulations and accepted engineering practice. LFG generation rates were estimated for future gas production and serve as the basis for modeling and conceptual level engineering design plans for the control and destruction of landfill gas. Exhibit 3-13 shows a conceptual layout for the LFG control system based on the final configuration of the landfill (also in the JTD, on file at County DEH and County Department of Planning and Land Use).

The system will consist of a series of collection wells interconnected by above-ground laterals (pipes) and a main header pipe connected to a flare station. The system will be brought on-line with a blower designed to create a vacuum pulling LFG to the flare for destruction. The system, including additional collection wells and flares, will be expanded as the landfill is developed to provide ongoing control within the performance criteria established and mandated by the SDAPCD and State and Federal regulations.

As required in 27 CCR Section 20925(b), a system of landfill gas migration monitoring probes will be installed on 1,000-foot centers around the entire refuse prism to detect gas migration at the property boundary as shown on Exhibit 3-3. The 15 probes will be installed along the property boundary to the south and in consideration of the site topography along the northeast and west of the refuse footprint.[18] The probes will be installed around the perimeter of the refuse footprint as the landfill is developed beginning on the northern end of the site and moving towards the south. The conceptual location of the probes provide effective points to detect any gas migration since the probes are located a sufficient distance beyond the landfill footprint to allow detection of migrating gas. In accordance with 27 CCR Section 20925(c) each monitoring point includes three separate probes installed in one well bore at the following depths, one equal to the maximum depth of refuse within 1,000 feet of the monitoring point, an intermediate probe set at or near half the depth of refuse and a shallow probe set five to ten feet below the adjacent ground surface. The depth of the well bores housing the probes may be adjusted based on geologic data and probes must be installed above the permanent low seasonal water table, bedrock or below perched ground water. Once the site is operational and data is gathered, adjustments will be made to the probe locations, as necessary. It is recognized that probe locations may be added to control landfill gas migration to groundwater and potential associated

[18] Probe locations with the exception of those along the southern property boundary surround the landfill footprint because of the large area covered by the overall property boundary and steep topography.

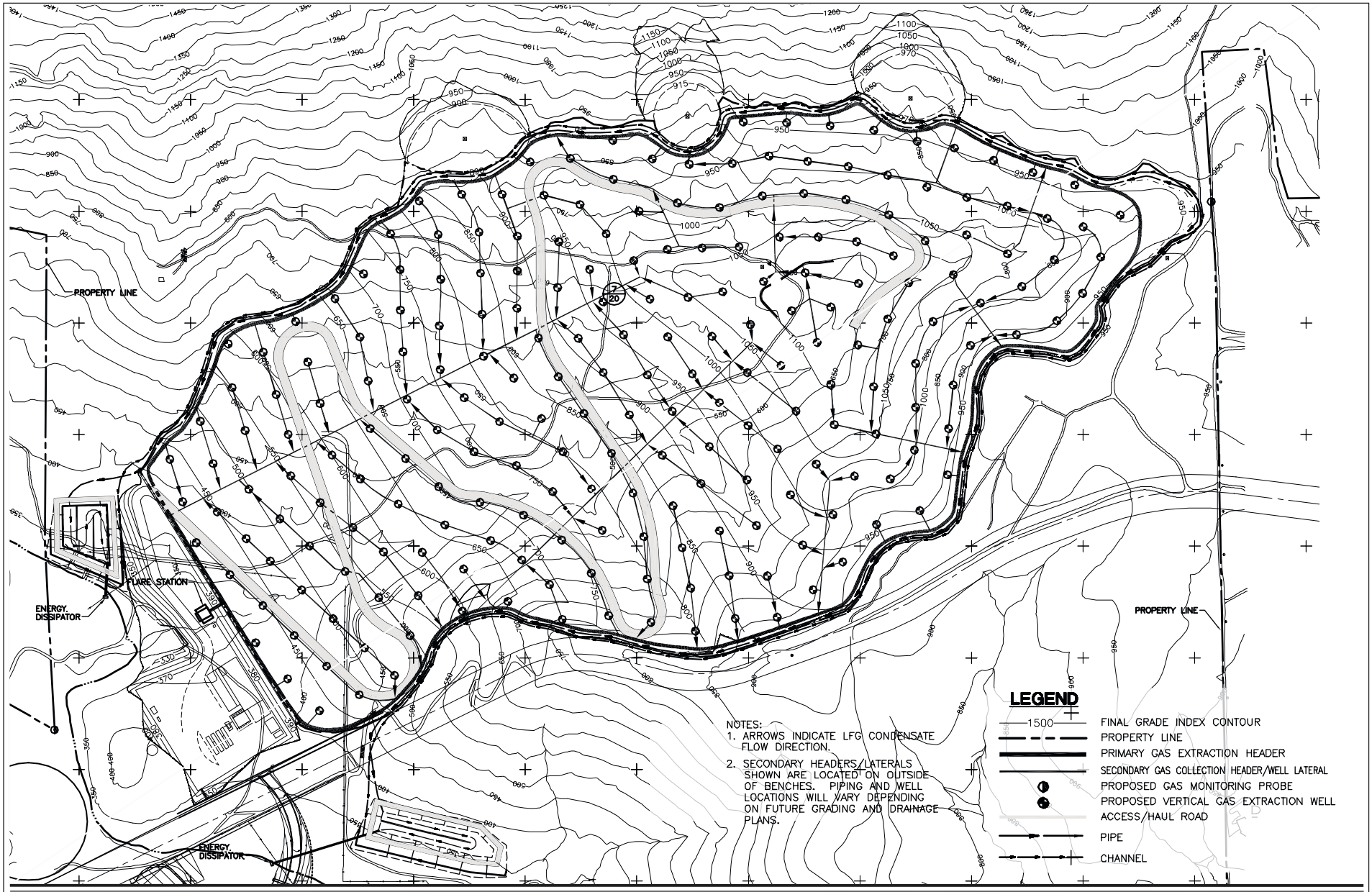

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Exhibit 3-13
Landfill Gas Control System Plan

Source: Bryan A. Stirrat & Associates, 2002

groundwater impacts. A discussion of water quality impacts associated with the generation of landfill gas is provided in section 4.3.3.2.

3.5.2 WATER CONVEYANCE AND WATER QUALITY MONITORING SYSTEM

Exhibit 3-14 indicates a typical cross section of a landfill showing the three proposed water/liquid control/management systems. As shown, surface water is controlled by a system of drainage control features installed along the surface of the landfill. Liquids collected within the refuse prism are managed with the LCRS. Groundwater seeping into the excavation beneath the landfill liner will be collected and transported away from the refuse prism by the subdrain collection system.

3.5.2.1 Subdrain System Monitoring

The performance of the landfill liner will be monitored at two different "levels," within the subdrain system and by the more traditional groundwater monitoring system. The subdrain system will be constructed to collect and control groundwater which intersects the subgrade excavation and will provide assurance that the containment system will satisfy requirements of 27 CCR for the five foot separation required between refuse and the groundwater. The subdrain system component will be the engineered alternative for the landfill as allowed under 27 CCR, Section 20080(b). (Please see Section 3.8.) The underlying subdrain will collect seeping groundwater, estimated in the most likely case to be about 2,000 gallons per day, and will convey it to a single collection point at the toe of the landfill. (Please see Section 4.3.3.2 for additional discussion regarding the subdrain system.)In effect, it will collect all water that comes within five feet of the refuse, providing an extensive sample of the quality of groundwater immediately below the liner system.

The subdrain system discharge will be monitored quarterly for the presence of contamination in accordance with the WDR parameters. All discharge from the subdrain system will be conveyed to a storage tank in the ancillary facilities area for testing. The clean water will be used on site for dust control and other acceptable operational uses. If contamination were detected remediation would be implemented in accordance with state and federal regulations.

3.5.2.2 Surface Water Drainage Facilities

The final surface water drainage control plan is shown on Exhibit 3-15. The surface water drainage control facilities are designed to carry 100-year, 24-hour storm event runoff volumes. The Rational Method for hydrology analysis was used to predict the 100-year runoff peak for the Gregory Canyon Landfill drainage areas (see Section 4.4, Surface Hydrology). The primary function of the surface water drainage control system will be to divert and convey stormwater flows in a controlled manner, to minimize erosion, channel/control sediment and to inhibit the potential infiltration of surface water run-on or precipitation into the refuse disposal areas.

Surface water control at the project site will be handled by two separate systems, one collecting and conveying water from undisturbed areas and the other collecting and conveying water from disturbed areas. The system for undisturbed areas will collect and convey run-on from the surrounding areas as well as runoff from the undisturbed areas within the refuse footprint. This system will consist of above ground perimeter drainage channels (i.e., the eastern and western perimeter channels) and energy dissipaters. The western perimeter channel is sized to accommodate the water volume associated with a simultaneous rupture of the existing Pipelines

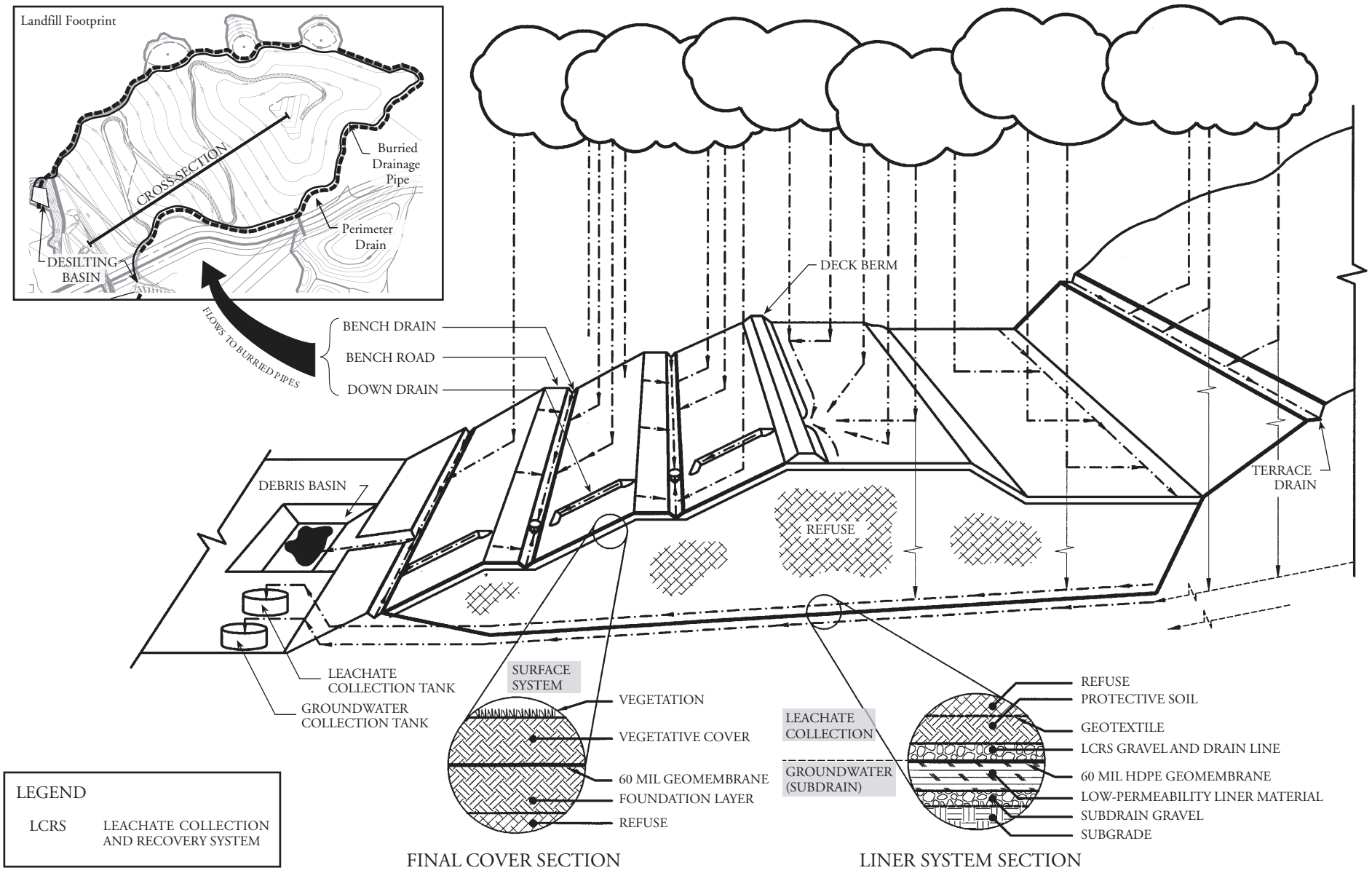

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Exhibit 3-14
Typical Landfill Cross-Section Depicting Water/Leachate Drainage and Collection Paths

Source: Bryan A. Stirrat and Associates, 2002

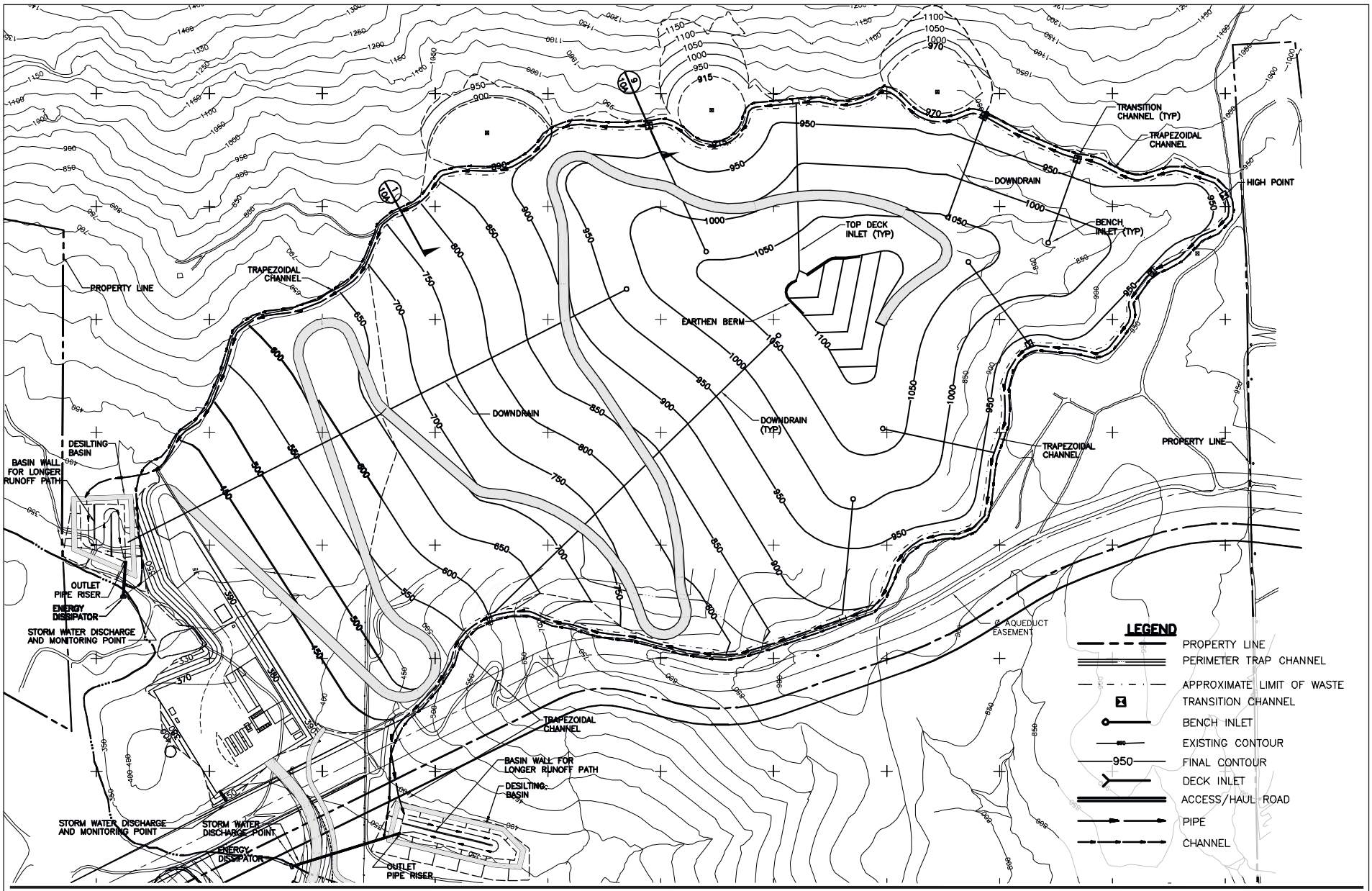

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Exhibit 3-15
Surface Water Drainage Control Plan

Source: Bryan A. Stirrat & Associates, 2002

1 and 2 and future Pipeline No. 6 during a 24-hour storm event.[19] The refuse fill slopes directly adjacent to the western perimeter channel may also be armored[20] to prevent excessive erosion to the refuse cover material and possible surface water infiltration due to a pipeline rupture. (The size of the perimeter drains could be reduced if the existing and future pipelines were relocated further to the west.)

The trapezoidal perimeter drainage channels will be constructed of reinforced concrete. The eastern channel, which will be three feet wide at the base and four feet deep with a one to one side slope, will be constructed in the initial construction phase to accommodate flows from the upper eastern slopes of the canyon. Construction of the final western perimeter channel will begin during the Phase II excavation. The western channel will be four feet wide at the base and 5.5 feet deep with a one to one side slope. As discussed above, the perimeter channels will handle flows from the off-site surrounding areas and the undisturbed areas within the refuse footprint. The perimeter channels will discharge downstream of the landfill into the natural drainage course. Discharge velocities will be maintained at less than or equal to pre-development conditions through the use of energy dissipaters.

The second drainage control system will collect and convey run-off from only the disturbed areas within the refuse footprint. This system will consist of a buried drainage pipe, engineered grading, drainage berms, downdrains, and energy dissipaters, and two desilting basins. Water from the desilting basins will be monitored at two locations on-site. Earthen berms constructed along the outer edges of the decks will intercept stormwater flows and direct the water into the downdrains, which will convey the water to buried drainage pipes installed parallel to the eastern and western perimeter channels. The downdrains will be perpendicular to slope contours and located atop, and anchored into, the final landfill surface. The downdrains will be extended up completed side slopes of the landfill as the filling progresses. The downdrains will also have inlets at each bench to accommodate flows along the inside edge of the benches resulting from stormwater from the landfill side slopes. The downdrains will outlet into the buried drainage pipes that will discharge into the desilting basins. Based on the engineering design requirements the calculated basin efficiency will accommodate a disturbed area within the refuse footprint of approximately 75-acres at any time over the life of the project. (Basin design and efficiency calculations are included in the JTD.)

In conjunction with the disturbed area surface water control system features a number of sediment and erosion control measures will be implemented in accordance with NPDES requirements as outlined in the site specific SWPPP. The SWPPP provides the BMPs that will be implemented to minimize erosion and control sediment in order to provide protection of stormwater flows (also see Section 3.5.2.5). The primary stormwater BMPs to be implemented at the project site consist of a combination of erosion/sediment control measures, including mats, mulching, coir logs, straw/hay bales as well as hydroseeding with native plants. Within the ancillary facilities area the project will implement dry management controls for sediment (i.e., sweeping) as well as the use of absorbents for oil and gas releases. The project will also include a storm drain inlet or outflow device from the ancillary facilities area (e.g., oil-water separators

[19] Pipelines 1 and 2 carry treated (chlorinated) water.

[20] Armor refers to slope protection in the form of a product like Armorflex or an equivalent. Armorflex is constructed from concrete blocks interlaced with fiber cables to facilitate drainage while minimizing erosion.

or other filtering devices required by the County stormwater discharge requirements) to protect surface water quality.

The desilting basins act as the secondary BMP to minimize transport of sediment off-site.[21] The desilting basins are passive systems that collect and settle soil particles out of the water in a finite time period. The capacity of desilting basins is based on the potential volume of silt generated from the contributing watershed area and is determined based on the Universal Soil Loss Equation (USLE). One of the coefficients in the USLE is an empirical value that is a summation of individual storm products of the kinetic energy of rainfall, in hundreds of foot-tons per acre, and the maximum rainfall intensity, in inches per hour of all significant storms on an average annual basis. As discussed above, the project includes two separate drainage control systems, one to handle stormwater flows from surrounding areas and undisturbed areas within the refuse footprint and the second to handle runoff from the disturbed areas within the refuse footprint. Only flows from the disturbed areas within the refuse footprint would be directed to the desilting basins. Therefore, basin efficiency calculations rendered the maximum disturbed area that could be maintained at any given time over the life of the project including active operations and the post-closure maintenance period.[22]

The buried drainage pipes will discharge to the eastern and western desilting basins. The purpose of the basins will be to reduce the amount of silt ultimately discharged from the landfill site. The basins are designed to settle out material in the medium silt range and will not retain water. Table 3-4 provides information on the desilting basins.

TABLE 3-4
CHARACTERISTICS OF DESILTING BASINS

CHARACTERISTIC	EASTERN DESILTING BASIN	WESTERN DESILTING BASIN
Acres	1.8 acres	3.7 acres
Length	375 feet	675 feet
Width	350 feet	250 feet
Depth	20 feet	20 feet
Capacity	15 acre-feet; 32,500 tons of silt	18.4 acre-feet; 40,000 tons of silt
Source: Bryan A. Stirrat & Associates, 1999		

Both the western perimeter trapezoidal channel and the buried drainage pipe cross the existing First San Diego Aqueduct easement adjacent to the western desilting basin. At this location the

[21] The proposed desilting basins for the project have been designed using a 10-year, 6-hour storm event and based on available data for site conditions a 0.02 mm grain size. The proposed basins could handle runoff from an approximately 75 acre area within the refuse footprint at any given time over the life of the project. The calculations indicate that the proposed basins have adequate size and capacity to provide settling velocities of less than the 0.00096 ft/sec, and consequently the settlement efficiencies recommended in the BMP Handbook.

[22] J. Ateshian empirically derived an equation in 1974 (as a supplement to the USLE), which is applicable for Southern California. The equation (R=16.55xP2.2) uses two-year, six-hour rainfall data (P), and the product R is used in the USLE equation to estimate potential silt volumes. The author empirically determined that the ten-year, six-hour rainfall event most closely models the average rainfall event that watersheds will experience, year after year. This model yields the best estimate of potential sediment deposits in a particular desilting basin on an annual basis. In conjunction with these design guidelines the California Storm Water Best Management Practice (BMP) Handbook was also used.

perimeter channel will have a cutoff wall on the upstream and downstream side of the crossing to prevent water from undermining the aqueduct. The crossing will be reinforced with extra concrete and steel.

The eastern desilting basin and the discharge point for the eastern perimeter channel will outflow directly into the San Luis Rey River. The western desilting basin and discharge point for the western perimeter channel will also outlet to the river unless the aqueduct easement is relocated further west. If the pipelines are moved west, then the western desilting basin and channel will discharge to a pipe located at the access road crossing to reduce the number of structures crossing the aqueduct easement.

Before each rainy season, after each major storm, and monthly during the rainy season, all drainage facilities will be inspected and any required maintenance performed to ensure that the drainage channels and desilting basins function properly. Any silt collected in the basins will be used as daily cover.

Any flows from adjacent properties and the undisturbed areas within the refuse footprint will be contained in the perimeter drainage channel and diverted around the basins as discussed earlier and as shown in Exhibit 3-15.

3.5.2.3 Groundwater Monitoring

The groundwater monitoring program will be implemented in accordance with State water protection requirements under 27 CCR, Chapter 3, Subchapter 3, Article 1 (Article 1). A groundwater monitoring system will be installed in accordance with 27 CCR, Section 20415 and 20420 for a Detection Monitoring Program. The basis of the system design is the geologic and hydrogeologic characterization study conducted by GeoLogic Associates in 1997, 1998, and 1999. A copy of this study is in the Technical Appendix and summarized in Sections 4.2, Geology and Soils, and 4.3, Hydrogeology. The proposed groundwater monitoring system and program is included in the JTD for review and approval by the RWQCB as part of the landfill permitting process.

The monitoring program will include downgradient wells to collect representative samples of groundwater at the downgradient limit of the landfill, or "point of compliance," and upgradient wells to collect samples of groundwater that are representative of "background" conditions.

As shown on Exhibit 3-16, the proposed monitoring well network will include a total of 16 wells. Specifically, existing wells GLA-2, GLA-3, GLA-12, GLA-13 and GLA-14 will monitor the downgradient water quality in addition to three new wells (GLA-A and GLA-B) constructed at the toe of the landfill, while existing wells GLA-4, GLA-5, GLA-11, and proposed wells GLA-17 (located on the west ridge between the landfill and the aqueduct) and GLA-18 (located on the east side of the landfill footprint) will be background/cross-gradient wells. Of these wells only well GLA-18 cannot be constructed prior to landfill operation because of the steep and currently inaccessible location proposed. GLA-18 will be constructed following grading of the electrical utility pad as part of relocation of the transmission lines. In addition, existing wells GLA-1 and GLA-10 located north of the compliance wells at the toe of the canyon will remain and serve as water level measuring stations and may be used for future groundwater quality monitoring, if necessary. The water quality monitoring program will also include monitoring in the San Luis Rey River valley from existing Lucio Dairy well 2 and on-site well GMW-3, located upgradient of the project area and wells #34 (SLRMWD designations) and GLA-16 downgradient of the

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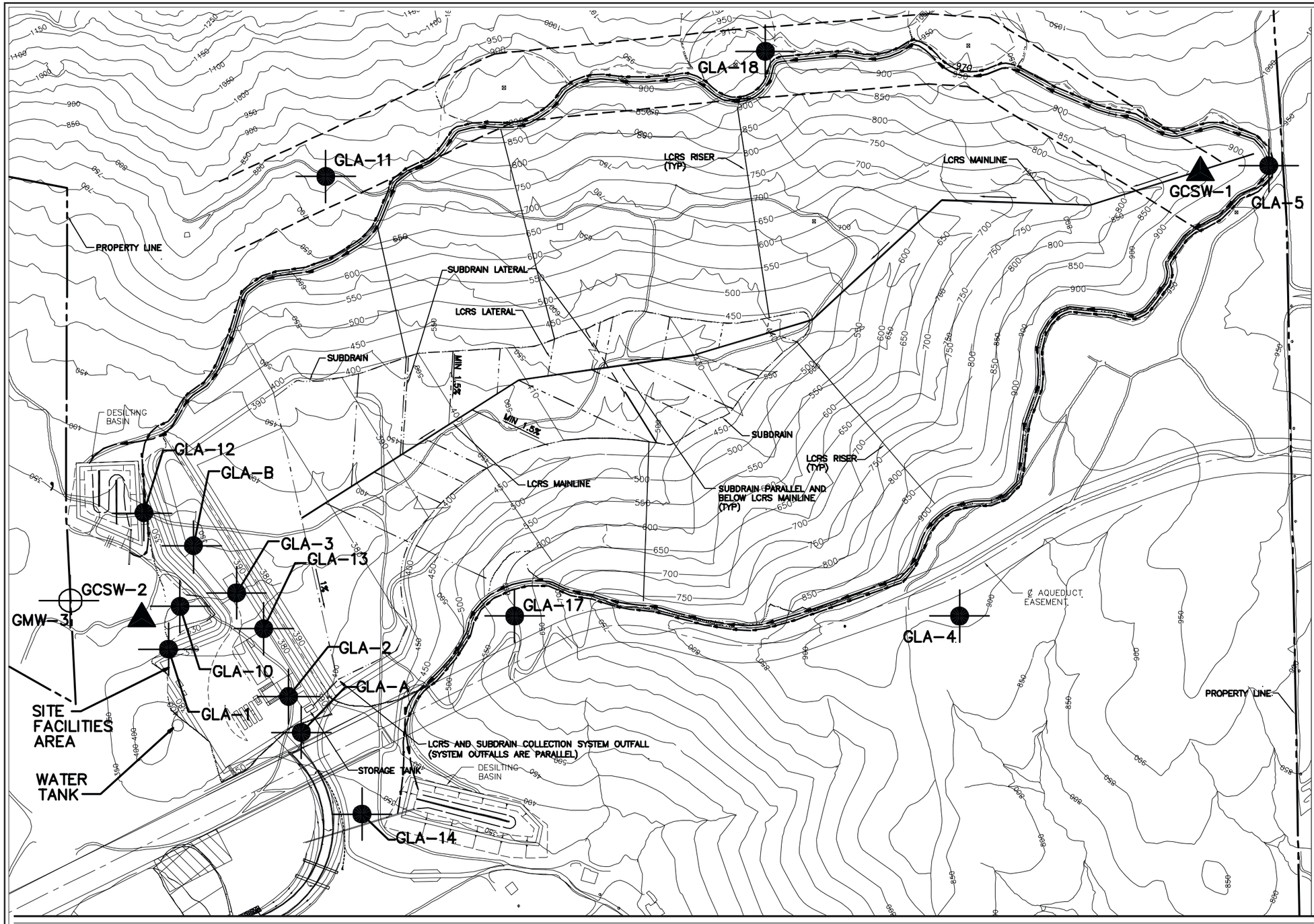

NOTE :

Conceptual layout only. Changes may be made with each phase of development if necessary

LEGEND

- LCRS RISER/CLEANOUT
- LCRS LATERAL
- SUBDRAIN
- PROPERTY LINE
- 600 EXISTING GROUND CONTOUR

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0 400 Feet

Source: Bryan A. Stirrat & Associates, 2002

Exhibit 3-16
LCRS/Subdrain System Plan and Proposed Groundwater Monitoring Well Locations

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facility relative to groundwater flow direction. Under this monitoring program, existing wells within the landfill footprint will be properly abandoned as the landfill is developed while maintaining the groundwater monitoring system for the life of the landfill through the post-closure period.

Sampling of representative landfill perimeter wells (GLA-2, GLA-4, GLA-5, GLA-10, GLA-11, GLA-12, GLA-13, and GLA-14, and the wells within the San Luis Rey River valley (Lucio #2, SLRMWD #34 and GLA-16)), will be conducted on a quarterly basis beginning at least one year prior to the placement of waste at the site, and will be used to develop a database on the water quality prior to landfill activities. Water levels will also be measured in each of the wells monthly during the first year, and quarterly thereafter.

During the first year, the samples will be analyzed for the full suite of "constituents of concern" (COCs) as defined by the Code of Federal Regulations (40 CFR Part 258, Appendix II). The COCs include a broad range of general chemistry and metals, as well as volatile organic compounds, semi-volatile organic compounds, pesticides, herbicides and polychlorinated biphenyls (PCBs). Upon completion of four quarters of COC constituents, subsequent samples collected will be analyzed for a reduced suite of constituents, as deemed appropriate by the RWQCB (e.g., total dissolved solids, pH, chloride, nitrate as nitrogen, sulfate, calcium, magnesium, sodium and volatile organic compounds). In addition, individual constituents from the COC list whose mean annual concentration in background exceeds one-half of their federal Maximum Contaminant Level (MCL) will be added to the routine (quarterly) monitoring parameter list, or any other constituent(s) that the RWQCB requires to be included due to local concerns. In accordance with State and Federal regulations, the laboratory shall achieve the lowest possible detection limits for each constituent in the program. Once the database has been established, the laboratory data will be analyzed for statistical significance using the procedures set forth in 27 CCR, Section 20415. Finally, the results and interpretation of the data obtained during sampling, the rate and groundwater flow direction determined from measurement of depths to groundwater in the monitoring wells, sampling and analytical methods, quality control procedures, landfill recordkeeping and on-site inspections will be reported to the RWQCB on a quarterly basis. This data will also be provided to the San Luis Rey Municipal Water District as required in the agreement with Gregory Canyon, Ltd.

After landfill construction begins, sampling will also include quarterly collection of liquid from the subdrain system tank and will include analysis for the constituents included in the groundwater and surface water monitoring program. The leachate collection and removal system (LCRS) tank will be sampled as required annually in October at a minimum and the analysis will include the full suite of COCs. Any constituent identified in the October leachate sample that is not currently included as a water quality monitoring parameter and is confirmed to be present by a retest sample collected and analyzed in April of the following year will be added to the list of routine (quarterly) water quality monitoring parameters.

With the exception of the LCRS system, unless more frequent testing is required by the RWQCB, the more extensive analytical program for COCs will only be conducted every five years for each media (e.g., groundwater monitoring wells, surface water, and subdrain water). Those COCs in samples that exceed their respective laboratory method detection limit and are found in less than 10 percent of the background samples taken during that sampling period will be added to the routine (quarterly) monitoring parameter list, or as specified by the RWQCB.

Reverse Osmosis System

The Agreement between the San Luis Rey Municipal Water District and the applicant requires the installation of a reverse osmosis (RO) system. A 50 gallon per minute (gpm) RO system will be installed in the southwestern portion of the ancillary facilities area (Exhibit 3.3). The RO equipment and interconnecting piping will be constructed above ground inside a concrete containment area which will be secured with a slatted chain link fence.

The purpose of the RO system is to provide a groundwater treatment facility that is in place in the event that groundwater impacts are identified. If the RO system were to be needed, impacted groundwater would be supplied to the RO system influent tank from the groundwater monitoring wells, any dedicated groundwater extraction wells installed as part of a corrective action program, or from the subdrain collection system that is part of the overall waste containment and environmental monitoring system. The sizing of the unit is based on treatment of groundwater associated with a release to the bedrock aquifer. Typical pumping rates for bedrock wells at the project site range from about one to five gpm. Estimated subdrain peak flow is about 2,000 gallons per day (one to two gallons per minute). Under these conditions, the proposed 50 gpm RO system can accommodate pumping and groundwater treatment from the subdrain system and/or several wells.[23] The RO system would be activated if it were determined to be the best method for treatment of groundwater. The primary constituent that the RO system would remove is total dissolved solids (TDS).[24] The RO treatment involves the separation of TDS from water by applying pressure to a feed stream passing over a semi-permeable membrane, thereby inducing flow of water molecules through the membrane, leaving the dissolved solids on the influent side. The RO system creates two effluent streams, the reduced TDS water that passed through the membrane (clean water) and the elevated TDS solution (brine) that remains on the feed side of the membrane.

If necessary, the effluent (clean water) will be stored in a tank and then used for dust control on-site, or with approved permits, discharged to re-injection wells, or discharged into the San Luis Rey River. The water would meet a standard of 500 parts per million (ppm) of TDS. The brine, which is the end waste product that contains the larger TDS particles in a concentrated liquid, will be collected in a tank and hauled off site for disposal. It is anticipated that the brine would be taken to the Hale Avenue Resource Recovery Facility in Escondido or a similar facility.

3.5.2.4 Surface Water Monitoring

Surface water monitoring at the landfill will be conducted to monitor seasonal surface water run-off at designated monitoring points. Surface water monitoring is conducted to provide the RWQCB with data on the site containment effectiveness. Surface water monitoring will be performed on a quarterly basis and include sample analysis for the same constituents included in

[23] The RO system has been designed to handle peak flows from the subdrain, which are estimated to be 2,000 gallons per day. The RO capacity is 50 gpm or 72,000 gallons per day. However, the capacity of the RO unit could be increased in the future, if necessary.

[24] However, the RO system can be modified to handle organic compounds or other contaminants as necessary. Since typically RO units are designed to handle high salt content waste streams, in order for the RO system to treat VOCs, most likely either granular activated carbon or an air stripper would be needed for water treatment before the RO system.

the groundwater monitoring program, in accordance with the WDRs issued by the RWQCB. Surface water monitoring will include samples within Gregory Canyon (at the top and bottom of the canyon, if water is present), and within the San Luis Rey River, up and downstream of the point where Gregory Canyon intersects the river.

3.5.2.5 National Pollutant Discharge Elimination System Stormwater Monitoring Program

A SWPPP and Monitoring Program and Reporting Requirements (MPRR) have been prepared for the landfill in accordance with NPDES General Permit requirements. To obtain authorization for industrial stormwater discharge, the landfill must comply with a General Permit to Discharge Stormwater Associated with Industrial and Construction Activities. The operator has submitted a Notice of Intent (NOI) for issuance of a NPDES permit under the Construction Activities General permit and will submit a NOI for Industrial Activities concurrent with the application to obtain WDRs. The SWPPP and MPRR have been developed and submitted to the RWQCB in the JTD.

The natural geologic conditions at the site will act as a type of Best Management Practice (BMP) because the exposed slope faces in the excavated areas will be largely hard rock material, which is not erosive and therefore, storm water runoff from these areas will carry little, if any, sediment. In addition, the SWPPP provides the BMP's that will be implemented on the site over the life of the project to provide protection of stormwater runoff/run-on and to minimize the transport of sediment off-site. The BMPs will focus on erosion prevention and sediment control measures The desilting basins will be implemented as a secondary means of controlling sediment transport. The drainage control systems are discussed in Section 3.5.2.2,

Exhibit 3-15 presents a layout of the two drainage control systems. Downdrains are proposed as part of the BMPs at an average of 600-foot intervals to intercept runoff flows from the deck and benches before their flow velocities become erosive and to facilitate rapid removal of runoff from the landfill. The downdrains will reduce the runoff concentrations on unprotected areas of the waste prism, thereby minimizing erosion. All run-on from the surrounding areas and the undisturbed areas within the refuse footprint will be captured by the perimeter drainage channels and discharged directly into the natural drainage course downstream of the landfill. Stormwater flows will be discharged using energy dissipators resulting in velocities that are equal to or lower than pre-development velocities.

To control silt loading, stormwater flows from disturbed erodable areas within the refuse footprint will be directed into the basins. To accomplish this objective, the proposed surface water control system will include a separate buried large diameter downdrain system installed around the refuse footprint, which would direct runoff from the disturbed areas into the desilting basins.

In addition to the drainage control system the site will be operated with a combination of BMP's. Sediment transport from the landfill cover will be greatly reduced by the use of the erosion control BMPs (i.e., erosion control mats, mulching and hydroseeding) and also by the use of alternative daily cover. Silt will be managed by the sediment control BMPs such as the coir logs, straw/hay bale check dams and desilting basins. The erosion control mats and mulching will provide a temporary barrier to intercept energy from rainfall and will prevent soil particles from being detached until the hydroseeded vegetative barrier is established. These erosion control mats will be installed on the slopes and the decks of the landfill. The hydroseeding will promote the establishment of native vegetation on exposed areas, including the intermediate or final fill

areas of the landfill, to minimize exposure of soil from the elements. Once an area reaches a state of 70 percent native vegetation stormwater flows from that area will then be diverted into the perimeter channels and around the basin.

To maintain the integrity of the BMPs, inspection of the BMPs will be conducted and documented on a regular basis and maintenance repairs will be performed based on routine inspections and on an as-needed basis. The Monitoring and Reporting Plan is conducted to evaluate the effectiveness of the BMPs implemented as part of the SWPPP. To accomplish this stormwater monitoring is required on two occasions each year during the wet season, starting with the first rain event that produces a significant runoff volume. The designated discharge points will be monitored in accordance with the SWPPP and MPRR, and MPRR reports will be submitted to the RWQCB on an annual basis. A minimum of one upstream and two downstream monitoring points will be sampled.

3.5.3 LEACHATE CONTROL AND MONITORING SYSTEMS

The Gregory Canyon Landfill is designed to inhibit the formation of leachate by eliminating the intrusion of groundwater into the refuse prism and using surface water control features and practices to minimize the infiltration of precipitation which could eventually become leachate. Leachate will generally consist of water which is in the refuse that is brought to the landfill through a limited amount of water may be introduced into the refuse through rain events occurring during the active life of the landfill. Any liquids not absorbed by the trash which migrate to bottom and interior slopes of the refuse prism will be collected in the leachate collection and removal system (LCRS), which will be installed over the bottom liner (Exhibit 3-16).

The LCRS is designed and will be constructed to meet or exceed minimum State and Federal regulations. The quantity of leachate expected to be generated within the lined portion of the landfill was estimated by modeling the water balance in the landfill site. The LCRS is designed to collect and remove a minimum of twice the anticipated maximum daily volume of leachate generated within the refuse prism and will maintain less than a 30-cm (12 in.) depth of leachate over the composite liner system.

In the bottom area, the LCRS will be composed of a continuous gravel blanket and integrated dendritic drainage pipe collection network made up of lateral collectors and a mainline pipe. For slope areas with a gradient of 5:1 (horizontal to vertical) or steeper, a blanket-type collection system is not feasible. Leachate buildup on the slope liner will be minimal since the slope gradient will result in rapid conveyance of liquids to an intermediate bench where the LCRS, consisting of a pipe-and-gravel collection system, will be connected to the overall site LCRS pipe network. The LCRS laterals and bench collection piping will discharge into a mainline to be placed down the center of the refuse area. The LCRS pipes will have stainless steel cable in the pipe to allow for clean out of blockages.

The entire LCRS system is designed to drain by gravity flow to an outfall and then to two 10,000-gallon leachate collection storage tanks located in the southwest corner of the ancillary facilities area.[25] The storage tanks will be monitored routinely by the operator in accordance

[25] Initially one 10,000-gallon leachate storage tank will be installed with a second tank added when necessary based on liquid volume monitoring

with WDRs. The storage tanks will be equipped with a monitor that includes an automatic light that will signal when the liquid reaches a certain level. In addition, if liquid is detected during a water quality monitoring event, a grab sample will be taken and analyzed in accordance with the WDRS. Leachate collected in the storage tanks will be transported off site for treatment and disposal. There are facilities located in San Diego and Los Angeles Counties that could dispose of the project-generated leachate.

As discussed earlier, the primary source of liquids introduced into the refuse prism will be in trash delivered to the landfill with minimal secondary water or liquids coming from rain. Therefore, once a portion or the entire landfill is closed and capped with a final cover leachate volumes should decrease.

3.5.4 FIRE PREVENTION AND CONTROL MEASURES

The Gregory Canyon Landfill is located in a somewhat remote area, therefore, fire prevention and control measures are of great importance and will be diligently pursued by the operator. Burning of refuse will not be allowed at the landfill facility, which minimizes the chance of above ground fires.

The primary fire prevention measure will be a firebreak between the refuse and the undisturbed natural areas surrounding the landfill. In compliance with the requirement to maintain a minimum clearance of 150 feet from the periphery of any exposed flammable solid waste (California Public Resources Code Section 4373), refuse placed within 150 feet of the landfill perimeter will be placed using the following procedures:

- Clearance of brush and vegetative debris from around the active disposal area
- As operations move into the 150-foot zone the operator will place soil cover regularly throughout the day
- At no time during operational hours will refuse be exposed for more than four hours

The potential of subsurface fires is reduced through the application of daily and intermediate soil cover placement, which will limit the amount of oxygen available for combustion. The primary measures for fire control include load checking for smoldering or burning wastes and separation of these wastes if spotted with a dozer and the covering of the fire with soil. While water could be sprayed over burning wastes this is generally not done to avoid the introduction of liquids into the waste prism.

Additional fire prevention measures will occur on site. The landfill gas control system will be operated so as not to introduce excessive amounts of oxygen into the refuse prism. The extraction wells will be monitored for temperature and oxygen content to determine if a subsurface fire is present. All equipment with internal combustion engines will be equipped with approved spark arrestors and any flammable debris will be removed from the under carriages and engine compartments of heavy equipment on a regular basis. Fire extinguishers will be available at the entrance facilities, in the administration and operations trailers, and in landfill equipment and vehicles. Hazardous materials, collected as part of the Hazardous Waste Exclusion Program, will be stored in fire proof containers located in the ancillary facilities area.

Site personnel will also be observant of fires that may occur along the perimeter of the site and will help in suppression efforts. Additional fire suppression forces are available from the California Department of Forestry (CDF) station.

Tire storage can result in fires. To reduce the risk of fires from tire storage, tires will be stored within the landfill footprint in compliance with the County's 1994 Uniform Fire Code, Section 1103.3.6, Outside Storage of Tires, as well as Title 14, Section 17354 of CCR. Tires will be shredded a minimum of every six months.

3.5.5 VECTOR AND BIRD CONTROL MEASURES

Refuse compaction and the application of a daily cover are the most effective preventions against the propagation of vectors (i.e., insects, rodents) and birds on a landfill site. Professional pest control services, including conventional slap-traps and anticoagulent rodenticide, will be used to control insects and rodents in the ancillary facilities area. Site personnel will inspect landfill areas monthly for any signs of rodent activity and will implement the necessary measures to minimize vector nuisances. A Vector Control and Management Plan, which will be included in the JTD, will be provided to the Vector Surveillance and Control Division of the Department of Environmental Health for review and approval. The approved plan and bird control policy will be implemented for the landfill. Under the proposed vector control plan, items used at the site which may attract vectors will be stored in closed containers and/or within enclosed structures. Building openings, ground holes and deficiencies in the perimeter fence will be repaired to deter the infusion of ground vectors.

Removal of the existing dairy will eliminate attraction and habitat for cowbirds and other nuisance bird species. However, the landfill will attract birds. Therefore, when birds are observed on-site, operations staff will use dispersal techniques to disturb the bird behavioral patterns. These techniques may include the playback of distress vocalizations, falcon kites, owl decoys, or dispersal by humans and/or dogs.

To minimize mosquitoes, proper grading and drainage will eliminate puddles and wet areas. The desilting basins are designed using Best Management Practices (BMPs) so that the basins drain themselves within 72 hours through the use of drain pipes and evaporation. The basins will be cleaned out regularly. Since tire storage can attract vectors, tires will be shredded a minimum of every six months to deter both mosquitoes and rodents.

3.5.6 LITTER CONTROL MEASURES

Wind is the primary cause for fugitive litter around the landfill site. The main control for windblown litter begins at the unloading area through the rapid spreading and compacting of refuse and placement of daily cover over all exposed refuse at the end of each working day. Commercial unloading activities will be conducted at the toe of the working face, when practical, to afford some wind protection. All commercial loads will be required to be covered with a tarp. Portable, temporary fencing may be used to control windblown papers at the working face. Disposal operations will be suspended during periods of high winds (when sustained winds of 40 miles per hour or greater, or gusts of 55 miles per hour or greater are expected to persist for one hour or longer.)

Section 5 of Proposition C includes a mitigation measure concerning litter and illegal dumping. The measure, which is incorporated into the project, requires that a clean up team, consisting of one truck with a two-person crew, inspect for and clean up all litter and illegal dumping on or adjacent to the access road and SR 76 between I-15 and the site. The inspection and clean up will occur five days each week. In addition to the requirements of Proposition C, litter inspection will be done every day that the landfill is open to accept refuse, and litter will be cleaned up on

the sixth day as determined necessary by the inspectors. Litter will be collected as necessary outside the landfill perimeter, along the southern boundary of the project site adjacent to the landfill footprint, on-site around the operations area, along SR 76 between I-15 and the project site, along the access road, and any other areas where litter has blown off-site in objectionable quantities. Project-related litter will not be allowed to accumulate along roads, fences, or in vegetation.

3.5.7 ODOR CONTROL MEASURES

Odors from the refuse prism will be controlled by confining the active working face to as small an area as practical and by the application of daily or intermediate soil cover or approved ADC the refuse at the end of each operating day. In addition, a landfill gas control system will be installed to further control odors.

3.5.8 DUST CONTROL MEASURES

In accordance with Proposition C, a Dust Control Plan will be prepared and submitted to the SDAPCD. The dust control measures (Plan) for the proposed Gregory Canyon Landfill consists of both construction/operations and maintenance procedures. During construction the site will be wetted down in the late morning and after work is completed for the day. Non-active construction areas that have not been reseeded will be wetted down at least once per day to minimize windblown dust.

The main access road will be paved until the last 500 feet of the road and will be swept regularly. Crushed rock will be used on the unpaved haul roads. All unpaved haul roads will be watered every two hours during construction, unless the road surface appears visibly damp. All areas of vehicle movement will be kept sufficiently damp to prevent the raising of dust by travel in these areas. Traffic speeds of no more than 10 miles per hour will be maintained on all on-site, unpaved road surfaces. Soil cover areas will be watered when conditions exist which may result in the formation of fugitive dust.

In addition, to minimize fugitive dust from loads (such as construction and demolition debris), covering or tarping these loads will be required. Uncovered dusty loads may be refused. Customers found to be bringing in uncovered loads will be informed of the covered load policy and will be rejected upon second observation. Dusty loads will be watered as soon as possible to reduce fugitive dust generation during tipping. In addition, trucks carrying aggregate off-site will be watered down prior to leaving the site to reduce fugitive dust.

Dust control measures will be implemented in areas that are not in active operations to minimize wind generated dust. Water will be applied and/or temporary vegetation planted on intermediate soil cover areas. Groundcover will be re-established on areas disturbed by construction through seeding and watering those areas that will not be disturbed for extended periods. A native vegetative cover will be planted and maintained on completed fill and excavation slopes.

These fugitive dust control measures are sufficient to comply with SDAPCD rules and regulations.

3.5.9 NOISE AND VIBRATION CONTROL MEASURES

Site operations will be conducted in compliance with Cal-OSHA regulations and the County Noise Ordinance. Noise levels of on-site equipment will be controlled by the installation and

proper maintenance of mufflers on all motorized vehicles. In the event that excavation operations necessitate additional measures beyond use of traditional heavy equipment, controlled blasting may be employed. Written notice will be provided to residents within a one-mile radius of the blast site at least 24 hours in advance of any on-site blasting. Landfill employees will be provided with hearing protection (e.g., ear plugs or muffs) to reduce exposure from continued on-site noise levels. Rock crushing and tire shredding will occur at least 1,500 feet from the nearest residences unless other forms of noise attenuation, such as berms or acoustical curtains, are used to reduce combined landfill noise levels to below the County Noise Ordinance limit.

3.6 PROJECTED SITE LIFE AND LANDFILL CAPACITY

3.6.1 WASTESTREAM CHARACTERISTICS AND VOLUMES

Based on the final grading plan for the landfill, the estimated total gross airspace capacity for the site (i.e., the difference between the proposed bottom grades and proposed final grades) is approximately 64.4 mcy. The total net airspace capacity for this same area (i.e., net airspace = gross airspace less volume consumed by the containment system and final cover system) is approximately 61.9 mcy. The total estimated refuse volume, based on a refuse to daily and intermediate soil cover volume ratio of 4:1, is approximately 49.44 49.52 mcy or 33.43 million tons based on an in-place refuse density of 1,350 lbs/cy.

It is anticipated that an average of approximately 3,200 tpd, or 1.0 million tons annually, of waste will be deposited at the landfill over its site life with maximum peaks of 5,000 tpd[26] experienced occasionally, based on the waste stream projections for North County. Accounting for the volume occupied by the containment system, daily, intermediate, and final covers, the estimated site life is approximately 30 years.[27] The site life is based on an initial inflow rate of 1,950 tpd or 600,000 tons annually and a growth rate of four percent per year until the maximum tpd is achieved and is constant from this level until closure. Assuming a start year of 2001, the projected closure year would be 2031, using these refuse inflow rates.

Many factors can affect the ultimate site capacity of a given landfill including variations in annual tonnage delivered to the landfill, AB 939 recycling programs and/or the use of alternative daily covers. Landfill settlement also impacts capacity and will depend on various factors or processes such as the types of refuse placed and their corresponding moisture content, the refuse placement density, consolidation of the refuse under loads imposed by overlying fill, and biological and chemical decomposition. It is estimated that much of this total settlement will occur during the operating life of the landfill and will be accounted for in periodic topographic surveys. A settlement analysis will be performed for the site as part of the closure plan.

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[26] The Solid Waste Facilities Permit will be issued specifying a daily and annual tonnage cap. The analysis contained in this document is for the maximum daily intake of 5,000 tpd.

[27] Based on the design of the landfill and an intake of one million tons of waste per year, the landfill would have a 30 year life, which meets the Project Objective to provide for a long term solution, i.e., 25 years, for disposal of waste generated in North County jurisdictions.

3.6.2 LANDFILL CONSTRUCTION SEQUENCING

The Gregory Canyon Landfill will be a canyon fill to be developed in consecutive phases over the site's life. The conceptual engineering design proposes four excavation and three fill phases or sequences. The development sequence is based on the master excavation plan, phasing plans, final grading plan, and established design criteria. Each excavation/fill phase will be divided into smaller stages depending on site conditions and capital expenditure scheduling. The stages or sequences will be developed to create an environmentally sound operation that will provide the most efficient operation and use of the facility. The smaller sequences will limit the amount of earth and refuse area exposure, which will aid in the reduction of erosion and resultant sediment, dust and odor generation. It is anticipated that periodic excavations will occur every three to four years to create new space.

The proposed fill sequencing will allow for future settlement by filling the deck to an interim waste elevation below the ultimate fill elevation or final grade of the landfill. The remaining area will be filled in the future independent of each phase's individual capacity timeline up to the proposed final grading contours as shown on Exhibit 3-17.

The phased waste placement necessitates that the operator maintain minimum deck and sideslope gradients and construct temporary deck access roads. The stormwater drainage control facilities and the infrastructure for the ultimate configuration will be progressively constructed as waste filling is completed. Interim drainage and sediment control structures along with the erosion prevention measures will be constructed/implemented and periodically relocated as waste filling progresses. This will provide continuous stormwater collection and conveyance in a controlled manner and minimizing erosion, enhancing sediment control, limiting ponding, and the potential for leachate generation and/or surface water contamination.

3.6.2.1 Initial Refuse Disposal Area/Phase I

The Gregory Canyon Landfill conceptual design proposes that the initial waste disposal begin in the lower portions of the main canyon in the Phase I refuse area. The Phase I area will be divided into three smaller stages (Stages IA, IB, and IC). The initial Stage IA excavation will develop approximately 25 acres of the Phase I area. It is anticipated that this excavation, and all subsequent staged excavations, will be completed in a sequential manner within each phase, to minimize ground surface disturbance. Excess soil and/or rock generated from the initial development will be processed and then stockpiled within the landfill footprint, in Borrow/Stockpile Area A.[28]

Upon completion of the first excavation in Phase I, the required base liner system will be constructed and fill operations initiated. The total Phase I excavation (Stages IA, IB, and IC) is approximately 4.6 mcy as shown on Exhibit 3-18. Approximately 0.8 mcy of the 4.6 mcy will be required for the construction of the ancillary facilities area and SDG&E pads and to shape the canyon for receipt of the containment system. Subsequent filling of the Phase I area will create a deck area to an approximate elevation of 600 feet asml and provide 8.5 mcy of gross capacity as

[28] While the borrow/stockpile areas have been designed to accommodate all excavated material, if the exportation or sale of aggregate material were to occur, the applicant would obtain a MUP, if necessary, prior to the exportation or sale of material.

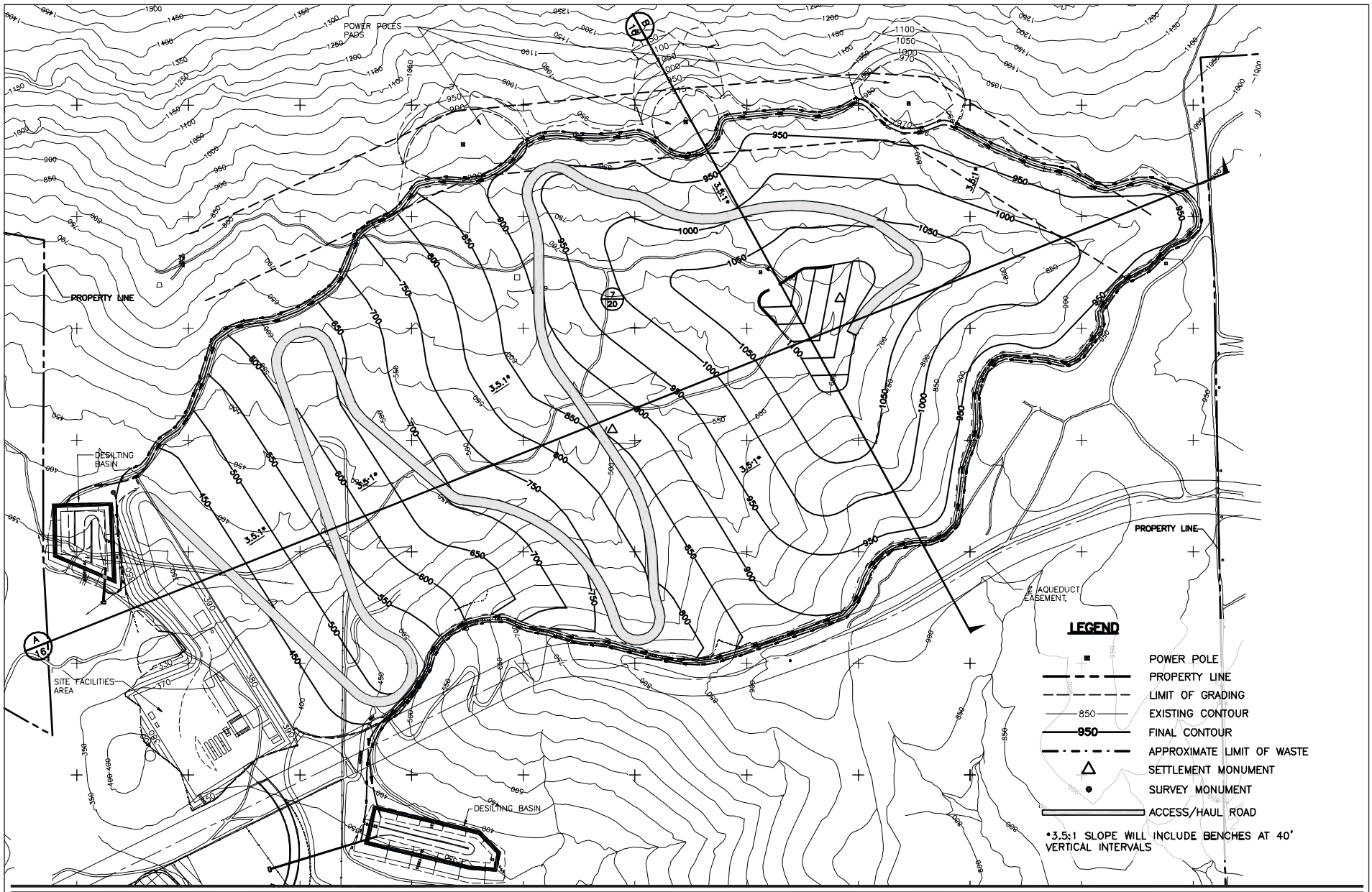

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Exhibit 3-17
Master Fill Plan/Final Grades of Landfill Footprint

Source: Bryan A. Stirrat & Associates, 2002

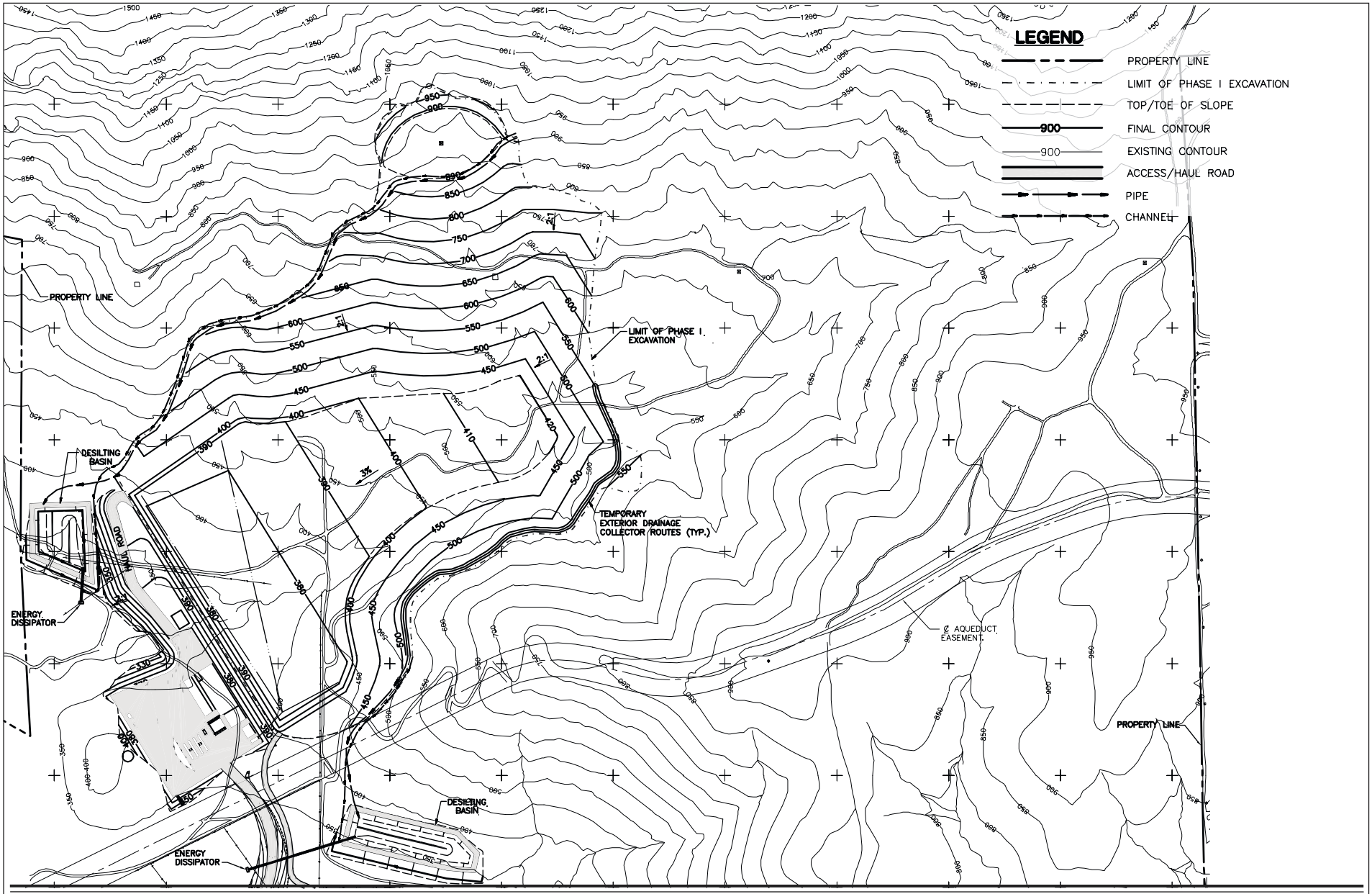

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Exhibit 3-18
Phase I Excavation Plan

Source: Bryan A. Stirrat & Associates, 2002

shown on Exhibit 3-19. When completed, the north facing slope of Phase I will be at final grade. Landfill gas collection/recovery facilities are generally installed when a landfill reaches 1,000,000 tons of refuse in-place. Extracted gases will be conveyed via header pipelines to a proposed flare station for destruction. Any liquids collected in the Phase I LCRS will be stored in the above-ground tanks. These activities will be conducted and/or systems extended for all phases of development.

3.6.2.2 Phase II

Prior to completion of filling in Phase I, work will begin on the excavation for the initial stage of Phase II to ensure the continued availability of refuse space. Excess soil and/or rock from the Phase II excavation will be processed and utilized for daily cover or stockpiled. If the exportation or sale of aggregate material were to occur, the applicant would obtain a MUP prior to the exportation or sale of material. Subdrain, liner and LCRS construction will then be completed just before Phase I reaches its waste capacity.

Upon completion of landfilling in Phase I, landfill operations will move to Phase II. The total Phase II excavation is approximately 6.4 mcy as shown on Exhibit 3-20. Approximately 0.76 mcy of the 6.4 mcy is required as fill material to shape the canyon for receipt of the containment system. When completed, Phase II will extend the fill up canyon to an approximate elevation of 675 feet asml (Exhibit 3-21). Phase II gross capacity will be approximately 10.8 mcy.

3.6.2.3 Phases III and IV

During filling of Phase II, excavation of Phases III and then IV will begin. Phase III excavation is the final area in the uppermost (southern) limits of the canyon and will involve approximately 489,000 cubic yards as shown on Exhibit 3-22. Finally, Phase IV excavation will involve a small area along the west side of the refuse footprint and about half way up the canyon. This phase consists of approximately 23,000 cubic yards of cut as shown on Exhibit 3-23. Excess soils and/or rock generated from the Phase III/IV excavation will be processed, stockpiled and utilized for daily cover. If the exportation or sale of aggregate material were to occur, the applicant would obtain a MUP prior to the exportation or sale of material. Approximately 111,000 cy of the Phase III/IV excavation will be required to shape the canyon for receipt of the containment system. Subdrain, liner and LCRS construction will then be completed just before the prior phase reaches its waste capacity.

Phase III and IV fill sequences will provide approximately 43.6 mcy of gross capacity as shown on Exhibit 3-24. The filling operations will complete the landfill to the final grading configuration at an elevation of 1,100 feet amsl as shown on Exhibit 3-17.

3.6.2.4 Phased Closure Option

Phased closure of the landfill may be implemented throughout development. When a cell is filled to capacity and has reached final grades it can be closed and capped with final cover. These areas would be closed in accordance with an approved Partial Final Closure Plan. Those areas which had not been closed at the end of active operation would then be closed in accordance with an approved final closure plan prepared in compliance with applicable regulatory requirements in effect at that time.

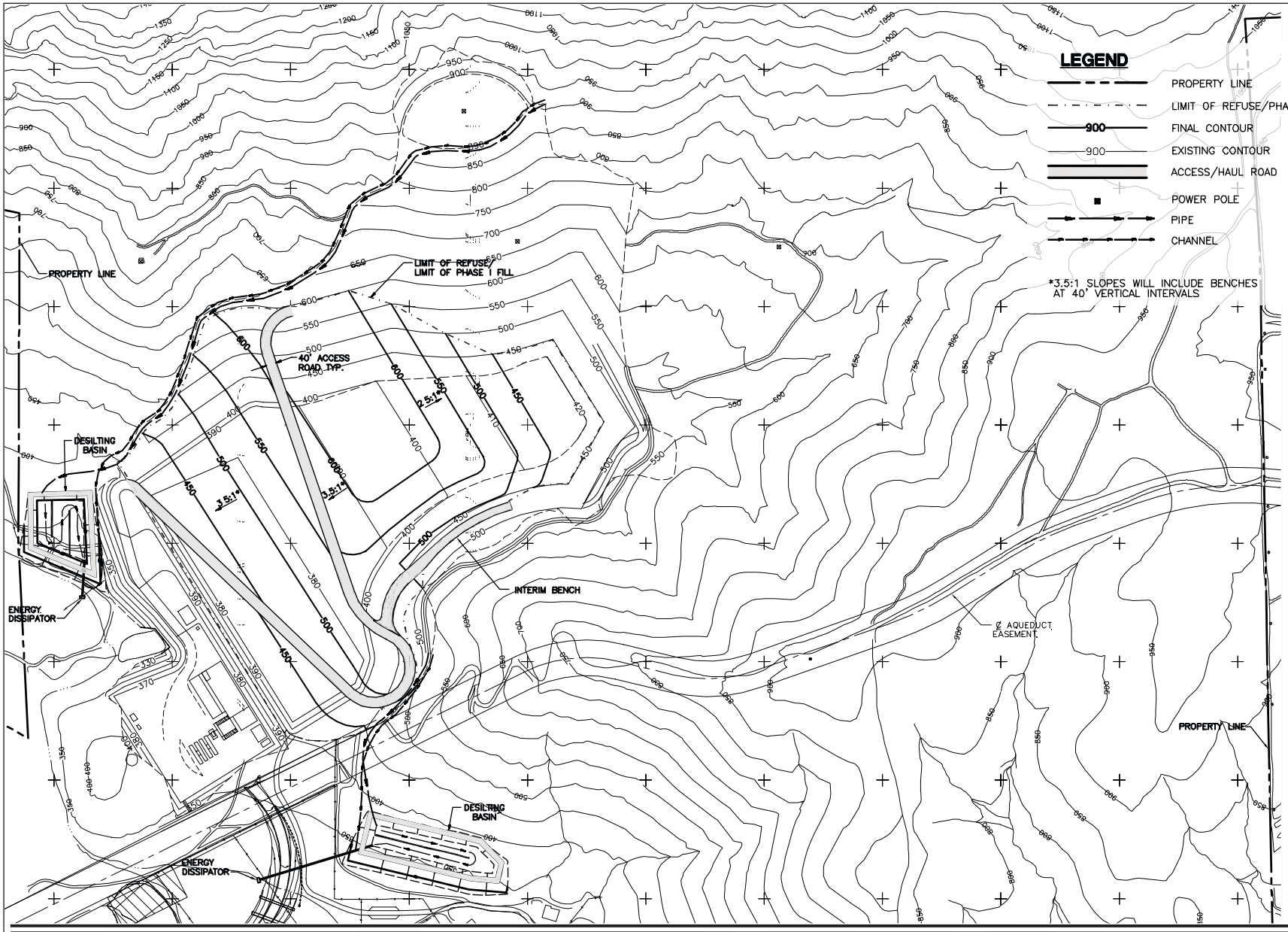

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Exhibit 3-19
Phase I Fill Plan

Source: Bryan A. Stirrat & Associates, 2002

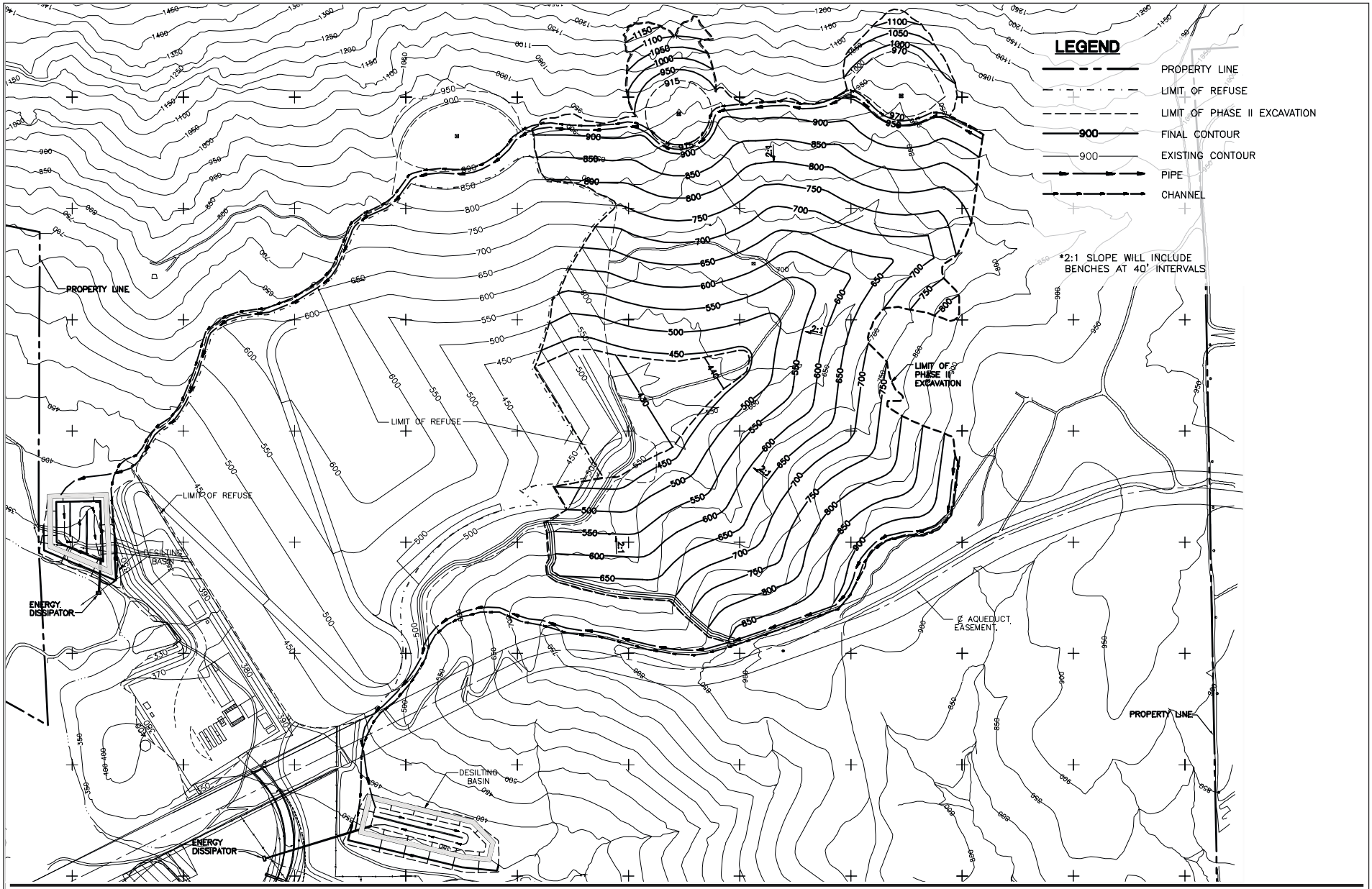

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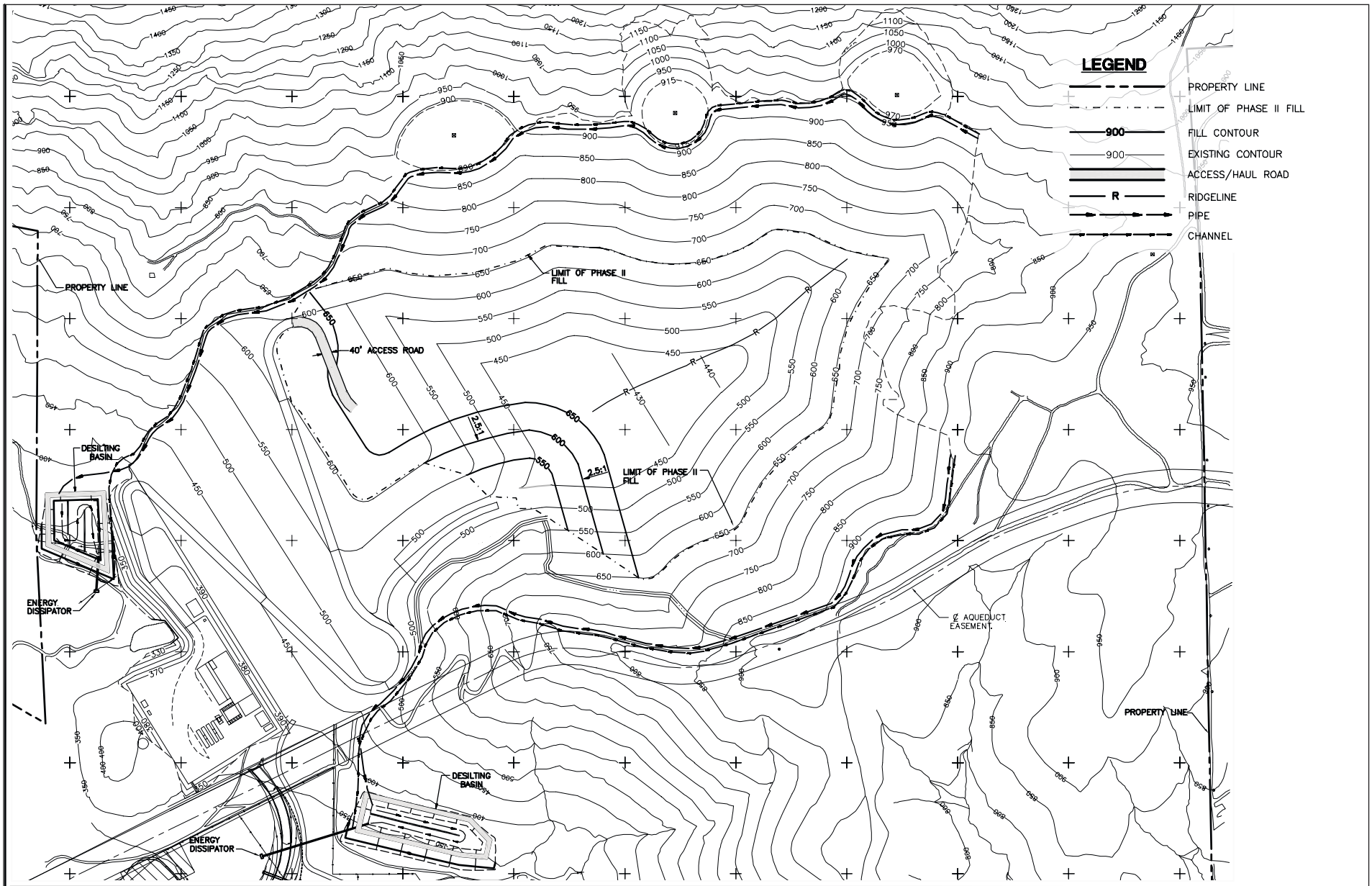
Exhibit 3-20
Phase II Excavation Plan

Source: Bryan A. Stirrat & Associates, 2002



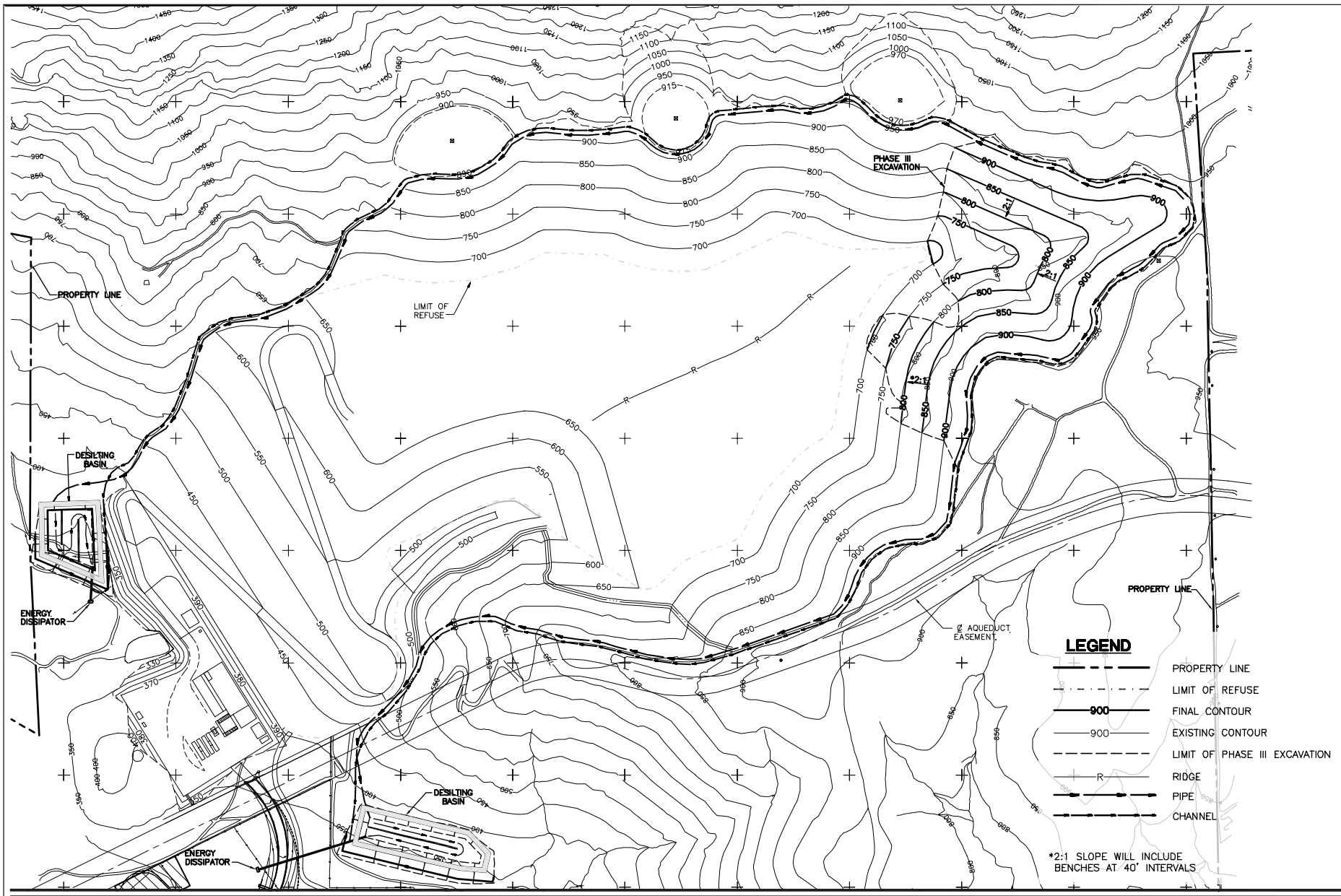
PCR

N

0 400 Feet

Exhibit 3-21
Phase II Fill Plan

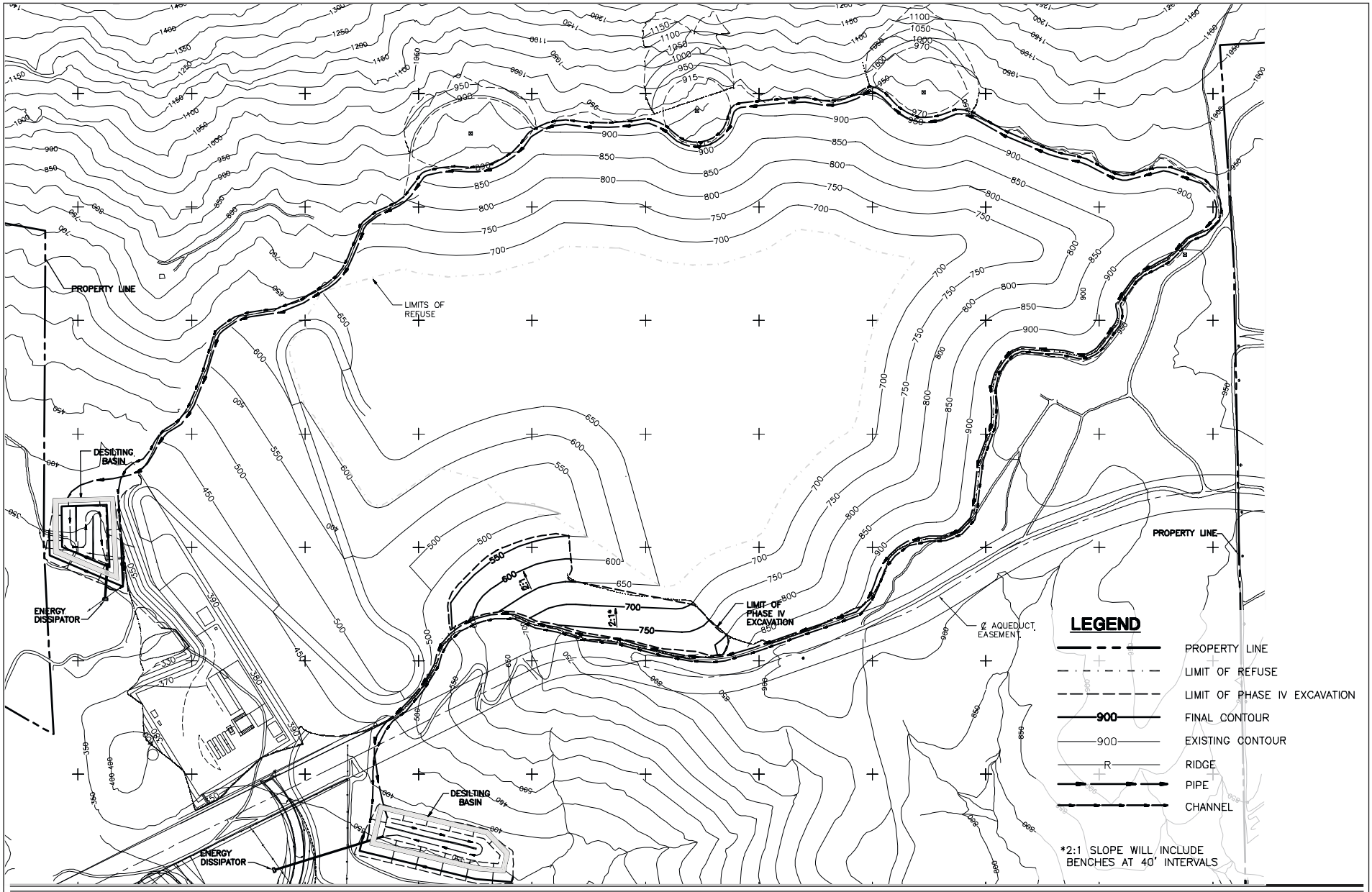
Source: Bryan A. Stirrat & Associates, 2002



PCR

Exhibit 3-22
Phase III Excavation Plan

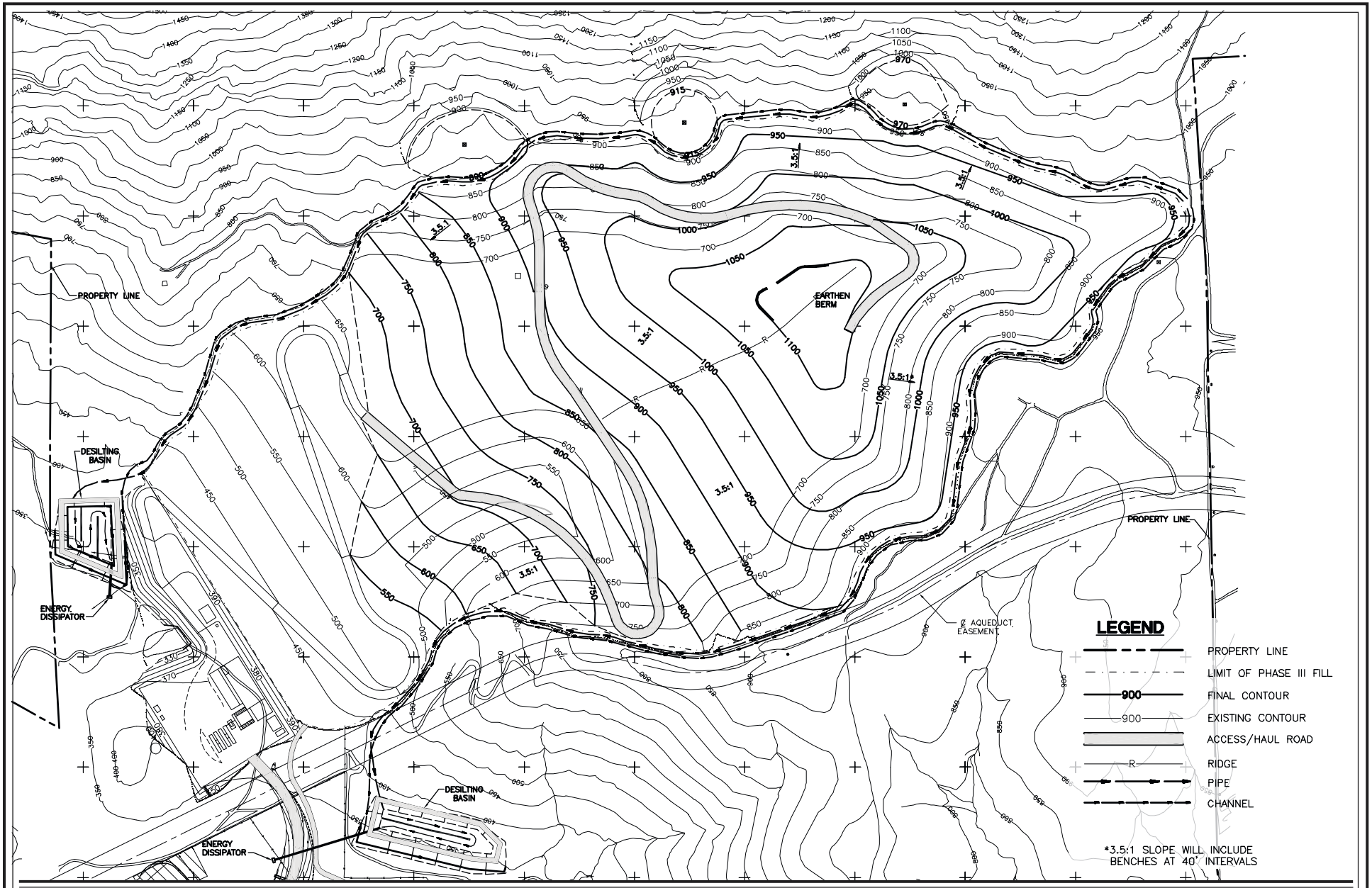
Source: Bryan A. Stirrat & Associates, 2002



PCR

Exhibit 3-23
Phase IV Excavation Plan

Source: Bryan A. Stirrat & Associates, 2002



PCR

Exhibit 3-24
Phase III and IV Fill Plan

Source: Bryan A. Stirrat & Associates, 2002

3.7 SITE CLOSURE

A Preliminary Closure and Post-Closure Maintenance Plan (Plan) element was prepared and incorporated into the JTD. The Plan was prepared in compliance with applicable State and Federal regulations under 27 CCR and 40 CFR, respectively. The Plan element will be submitted as part of the SWFP application package and must be deemed complete prior to issuance of the SWFP. A Final Closure Plan will be prepared and submitted to the appropriate regulatory agencies (e.g., CIWMB, LEA and RWQCB) two years prior to the anticipated closure date for any portion thereof or the entire landfill. A separate discretionary action and CEQA review and clearance will be required prior to approval of the Final Closure Plan. However, this EIR has evaluated the environmental impacts of closure to ensure that all phases of the project have been considered.

The Plan includes the proposed final cover design configuration in compliance with current State and Federal regulatory requirements. The prescriptive final cover design presented in the Plan element was the basis of the closure and post-closure estimate for the Gregory Canyon Landfill. Exhibit 3-25 shows the proposed final cover cross-sections for deck and slope areas. However, the actual final cover to be placed on the landfill will be determined by the RWQCB at the time either phased or final closure activities are implemented at the landfill. The proposed final cover design presented in the Plan is discussed below.

3.7.1 FINAL COVER DESIGN

The minimum final cover standard as outlined in the closure and post-closure requirements for Class III landfills contained in 27 CCR include the following three components: (1) foundation layer; (2) barrier (low permeability) layer; and (3) vegetative layer. Each layer is discussed below.

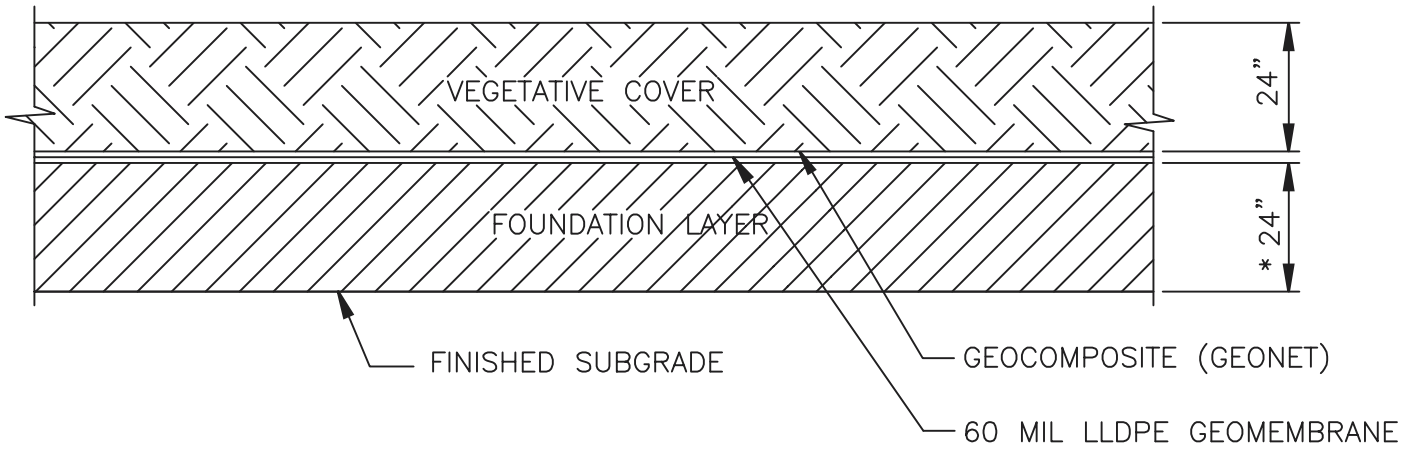
Several factors are taken into consideration in the final cover design, including the geometry of the landfill, local climatic conditions, potential landfill settlement, erosion protection, vegetative growth, the proposed waste liner system design, and the end use of the land.

3.7.1.1 Foundation Layer

When the landfill or a designated area for phased closure is brought to final grade, the final cover will be applied. The foundation layer will be a minimum of two feet in thickness and consist of random soil material. The foundation layer will be compacted in accordance with an approved Construction Quality Assurance (CQA) Plan developed as part of the Final Closure Plan.

3.7.1.2 Barrier Layer

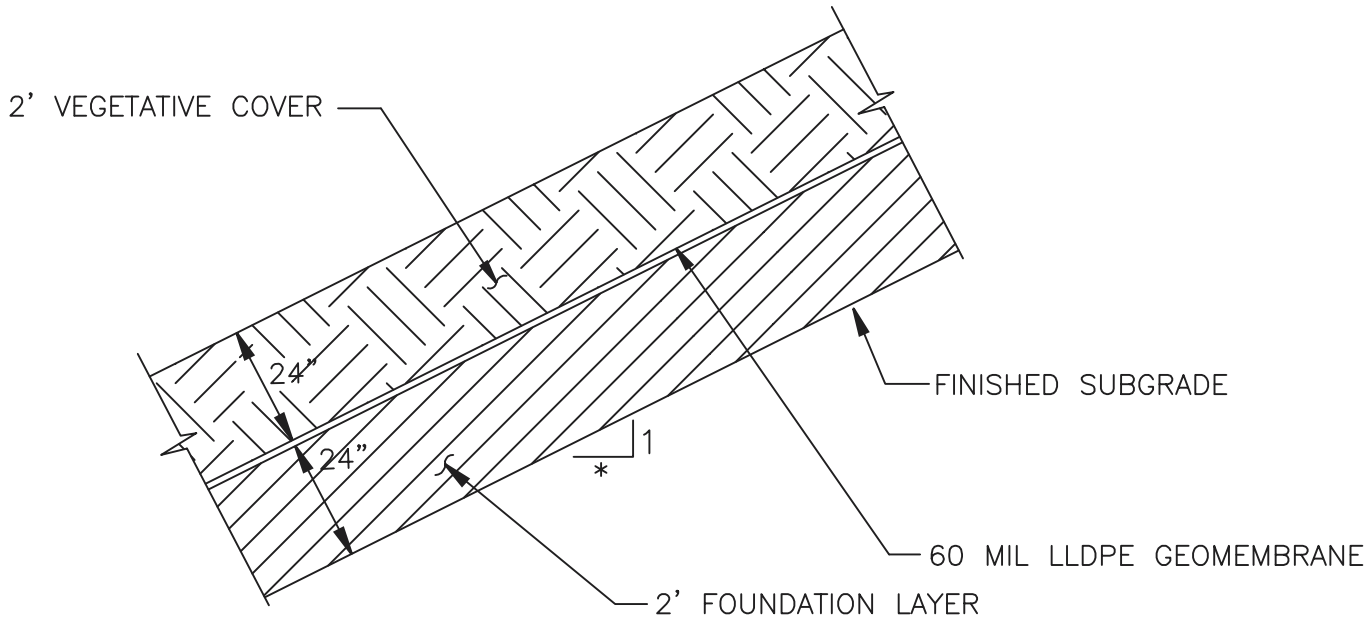
State and Federal regulations dictate that the final cover design have a permeability less than or equal to any bottom liner or natural underlying soil. Therefore, because the Gregory Canyon Landfill will be a lined refuse disposal facility, the final cover system design will include a barrier layer consisting of a synthetic cover (i.e., 60-mil liner low-density polyethylene (LLDPE) geomembrane). The geomembrane will be overlain in deck areas by a geocomposite drainage layer consisting of two geotextile layers with a high density polyethylene (HDPE) geonet placed between. This will facilitate lateral drainage of water accumulating above the barrier layer.



* NOTE: ASSUMES 12" SOIL IN PLACE

TYPICAL DECK COVER SECTION

NTS



* SLOPE VARIES MAXIMUM 3:1

TYPICAL SLOPE COVER SECTION

NTS

PCR

Exhibit 3-25
Typical Deck and Slope Cover Section

Source: Bryan A. Stirrat & Associates, 2002

3.7.1.3 Vegetative Layer

The depth of the vegetative layer will be designed at a minimum of two feet thick to allow for an adequate root depth to sustain natural vegetation while giving protection to the barrier layer from potential root penetration and the drying effects of evapotranspiration. To enhance slope protection and erosion control, final site faces will be planted with native vegetation. The vegetative cover will be a mixture of native grasses and plants that are compatible with the end-use of nonirrigated, open space. Plants will be selected for their suitability to the local climate, drought resistance, percentage of surface coverage, and root zone depths less than one foot, hardiness and low maintenance qualities. A list of recommended plant species for the vegetative cover is presented in Table 3-5.

TABLE 3-5
RECOMMENDED VEGETATIVE COVER
PLANT SPECIES LIST

SCIENTIFIC NAME	COMMON NAME
Artemisia californica	California sagebrush
Chaenactis artemisiaefolia	Artemisia pincushion
Dichelostemma capitatum	Blue dicks
Eriodictyon crassifolium	Yerba santa
Eriogonum fasciculatum	California buckwheat
Eriophyllum confertiflorum	Golden yarrow
Eschscholzia californica	California poppy
Gnaphalium bicolor	Bicolor cudweed
Gnaphalium californicum	California everlasting
Heterotheca grandiflora	Telegraph weed
Lasthenia coronaria	Goldfields
Lessingia filaginifolia var. *filaginifolia*	Cudweed aster
Leymus condensatus	Giant wild rye
Lotus scoparius	Deerweed
Lupinus bicolor	Miniature lupine
Lupinus hirsutissimus	Stinging lupine
Melica imperfecta	Coast Range melic
Mimulus aurantiacus	San Diego monkeyflower
Nassella cernua	Nodding stipa
Nassella lepida	Foothill needlegrass
Nassella pulchra	Purple needlegrass
Phacelia parryi	Parry's phacelia
Plantago erecta	Dot-seed plantain
Salvia mellifera	Black sage
Sisyrinchium bellum	Blue-eyed grass
Source: Helix Environmental Planning, Inc. 2000	

3.7.1.4 Final Cover Quality Assurance/Quality Control

A comprehensive Quality Assurance/Quality Control (QA/QC) Program Plan for placement of the final cover will be developed and included in the Final Closure. The primary purpose of the QA/QC Program is to provide evidence that suitable materials and good practices are used to

place the final cover and to document that the cover will be placed in a manner consistent with the closure plan design specifications.

3.7.1.5 Alternative Final Cover Construction

Federal regulations under 40 CFR, Part 258.60 and State regulations under 27 CCR, Section 20080(b) allow an operator to propose an alternative final cover to the standard prescriptive cover design. Research conducted on alternative final cover systems over the last few years has shown that comparable performance can be achieved using soils and cover geometries that differ substantially from the prescriptive cover. An alternative final cover design may be presented for approval for the Gregory Canyon Landfill. Should an alternative cover design be considered, the appropriate modeling will be performed and presented to the reviewing agencies to ensure consistency with the performance of a prescriptive cover system.

3.7.2 CLOSURE/POST-CLOSURE FINANCIAL ASSURANCE

In accordance with 27 CCR, Chapter 6 and 40 CFR, Subpart G, an operator must demonstrate financial assurance for the proper closure, post-closure maintenance and corrective action for potential releases at a landfill. The closure and post-closure cost estimate (presented in the JTD) serves as the basis to fund the closure account over the life of the landfill. Several financial mechanisms are allowed under 27 CCR, Section 22228, which includes the following:

- Trust Fund
- Enterprise Fund
- Government Securities
- Letter of Credit
- Surety Bond
- Pledge of Revenue
- Financial Means Test
- Guarantee
- Closure and/or Postclosure Maintenance and/or Reasonably Foreseeable Corrective Action Costs Insurance
- Federal Certification
- Liability Insurance
- Self-Insurance and Risk Management
- Insurance and Environmental Fund
- Other State Approved Mechanism

The operator must fund one or a combination of these funds over the life of the landfill in accordance with 27 CCR, Section 22225. The maintenance and monitoring costs presented in the JTD have been projected using current regulations and applicable requirements. In addition, an operator is required to establish a fund to correct the effects of an unforeseeable release of contaminates to groundwater. 27 CCR requires this fund be established and allows it to be combined with the closure/post-closure financial assurance. The JTD presents a cost estimate for worst case unforeseeable release. This cost estimate will be added to the closure/post-closure fund as required under 27 CCR. In the event that changes occur in the regulatory conditions pertaining to the landfill, these estimates will be adjusted accordingly and submitted to the CIWMB, LEA and RWQCB.

3.7.3 FINAL GRADING CONTOURS

The proposed final grading contours for the Gregory Canyon Landfill are shown in Exhibit 3-17. The final grading plan for the Gregory Canyon Landfill shows a maximum landfill elevation of 1,100 feet amsl and the final deck area with a minimum grade of three percent. Slight modifications to the proposed final contours may be necessary in the future to achieve optimum drainage control and to prevent ponding and/or excessive erosion of completed fill areas or to

reduce impacts associated with anticipated settlement during the post-closure maintenance period.

3.7.4 ULTIMATE LAND USE

The currently proposed ultimate post-closure end use for the Gregory Canyon Landfill is undeveloped open space. The final cover for the site will be designed to meet regulatory requirements effective at the time of closure and will provide a cover which will support drought-tolerant, native vegetation, and open space use. If a different end use is proposed in the future, it will need approval from the appropriate regulatory agencies.

Site closure will also include the reclamation of the borrow/stockpile areas. Any remaining stockpiled material would be removed. The areas will be graded as necessary to provide drainage. The areas will be hydroseeded for erosion control. In addition, any post-closure site security fencing will be of a type that will allow for wildlife movement, such as three-to-five string fence, but will ensure that all points of access are restricted to ensure public health and safety as required in 27 CCR, Section 21135(f).

3.8 PERMITS

The operation of a Class III landfill in the State of California requires that the project applicant obtain approval from the local and state agencies having jurisdiction over the handling and disposal of non-hazardous solid waste. Typically, review and approval in the form of a conditional use permit and sometimes an amendment to a General Plan designation and zoning would be required by the planning department with jurisdiction in the area. However, Section 7 of Proposition C amended the General Plan designation and zoning on the property to permit the landfill without a Major Use Permit. Section 4 of Proposition C lists the permits that will be required. This section describes the permits that may be required to operate the facility as described and lists the responsible agencies which have jurisdiction over the Gregory Canyon Landfill (Table 3-6). This Final EIR is intended to apply to all listed project approvals, as well as any other approval necessary or desirable, to implement the project.

3.8.1 SOLID WASTE FACILITY PERMIT (SWFP)

All Class III solid waste facilities are required to have a Solid Waste Facility Permit (SWFP) issued by the LEA with concurrence by the California Integrated Waste Management Board (CIWMB). The SWFP lists the conditions of operation and closure of the proposed project with which the facility is required to comply.

The County of San Diego, Department of Environmental Health Services is the current LEA having jurisdiction over the Gregory Canyon Landfill. The LEA issues and enforces the terms and conditions of the SWFP and will conduct monthly inspections of the landfill.

A certificate of insurance to demonstrate financial responsibility for operating liability claims (environmental impairment liability) has been acquired by the Gregory Canyon Landfill owner and will be updated annually pursuant to 27 CCR, Section 22215.

3.8.2 WASTE DISCHARGE REQUIREMENTS (WDRS)

The State Water Resources Control Board (SWRCB) requires Class III solid waste disposal facilities to obtain WDRs. The RWQCB, San Diego Region is the local agency which will issue.

TABLE 3-6
SUMMARY OF PERMITS

PERMIT NAME	ISSUING AGENCY	PURPOSE OF PERMIT
Solid Waste Facilities Permit (SWFP)	San Diego County Department of Environmental Health (concurrence by California Integrated Waste Management Board)	Defines operating conditions
Waste Discharge Requirements (WDRs), including a Variance for Engineered Alternative [a]	Regional Water Quality Control Board	Defines operating conditions and groundwater and surface water protection and monitoring procedures; variance to allow engineered alternative for bottom design
National Pollution Discharge Elimination System Permit (NPDES) [b]	State Water Resources Control Board	1) Establishes requirements for discharges to storm drains 2) Allows discharge of groundwater to surface water.
Section 401 Water Quality Certification	Regional Water Quality Control Board	Addresses water quality impacts on waterways
Permit to Construct/Operate (Air Quality)	San Diego Air Pollution Control District (APCD)	Specifies equipment and standards for collection, processing, and combustion of landfill gas
Section 404 Permit	U.S. Army Corps of Engineers	Addresses disturbances to "waters of the U.S."
Section 7 Consultation[c]	U.S. Fish and Wildlife Service	Addresses Endangered Species Act
Streambed Alteration (Section 1603) Agreement	California Department of Fish and Game	Addresses disturbances to natural streambeds and mitigation measures
Water Appropriation Permit	State Water Resources Board	Addresses water appropriation
Encroachment Permit	California Department of Transportation	Defines modifications to SR 76
Bridge Permit	San Diego County Public Works Department	Addresses crossing of waterways
Water Course Alteration Permit	San Diego County Public Works Department	Addresses alteration to waterways
Habitat Loss Permit (Rule 4d)[c]	San Diego County Department of Planning and Land Use	Addresses loss of habitat
Blasting Permit	San Diego County Sheriff's Department	Defines standards for blasting
Grading Permit	San Diego County Department of Planning and Land Use—Building Division	Defines standards for grading
Relocation Approval	Public Utilities Commission	Relocation of the easement and towers
Approval of Reclamation Plan and Financial Assurances [d]	San Diego County Department of Planning and Land Use	Reclamation of stockpiles, processing areas, and road; (as required by State Surface Mining and Reclamation Act)

PERMIT NAME	ISSUING AGENCY	PURPOSE OF PERMIT
Building Permit	San Diego County Department of Planning and Land Use—Building Division	Defines standards for construction of structures
Section 106 [e]	State Historic Preservation Office	Consultation regarding cultural resources
Major Use Permit[f]	San Diego County Department of Planning and Land Use	Exportation or sale of aggregate material

[a] Two alternatives that do not require a variance have been included in Chapter 6 of this Final EIR.

[b] For the landfill and ancillary facilities, including the RO system.

[c] Either a Section 7 or Habitat Loss Permit may be obtained to authorize an incidental take.

[d] A reclamation plan may not be required because the State Surface Mining and Reclamation Act does not apply to certain activities as provided in Public Resources Code Section 2714(b).

[e] Section 106 consultation under the National Historic Preservation Act (NHPA), if and to the extent required, if applicable.

[f] The San Diego County Ordinance, under the definition of borrow pit, allows for nine exceptions to the requirement for a MUP for the exportation and sale of aggregate material. Some of the exceptions include site preparation that is completed within a one-year timeframe. Therefore, the initial construction phase may be exempt from the requirement for a MUP. However, the project has been designed to accommodate the storage of all excavated material on-site. If the exportation or sale of aggregate material were to occur, the applicant would obtain the MUP, if necessary, prior to the exportation or sale of material.

Sources: Proposition C; David Evans and Associates, Inc.; San Diego County Department of Planning and Land Use, PCR Services Corporation, 2002

the site-specific WDRs for the Gregory Canyon Landfill. The WDRs will reflect the proposed design and operational aspects of the landfill facility, as well as a Monitoring and Reporting Program (M&RP) in accordance with 27 CCR, Article 1.

3.8.2.1 Primary Permitting Document

The main supporting document to obtain the SWFP and WDRs is the JTD. This document combines all of the technical information primarily required under a Report of Disposal Site Information (RDSI) and Report of Waste Discharge (ROWD). The JTD contains information on the site's operation, engineering design, and site and surrounding area characteristics. The JTD has been prepared in accordance with the content requirements mandated in the recently promulgated 27 CCR.

In addition, as allowed under 27 CCR, the JTD will also include a Preliminary Closure and Post-Closure Maintenance section. This section will provide the necessary information to be used as the basis to prepare the closure and post-closure maintenance cost estimate. This estimate will in turn be used to annually fund the closure account to provide for an environmentally sound closure and 30 years of post-closure maintenance or until the site no longer poses a threat to public health and safety or the environment.

3.8.3 VARIANCE FOR BOTTOM DESIGN (ENGINEERED ALTERNATIVE)

The project as designed complies with current federal regulations governing municipal solid waste facilities promulgated in 1993 under the Resource Conservation and Recovery Act (also known as Subtitle D). The design requirements include construction of a composite liner system The regulation requires a minimum 60-mil HDPE flexible membrane liner (FML) over a 2-foot thick layer of compacted soil with a hydraulic conductivity of no greater than 1 x 10-7 cm/sec. Additionally the landfill design must include a leachate collection system over the liner that is capable of maintaining less than 12-inches (30 cm) of leachate over the liner.

The California Code of Regulations (CCR) Title 27 §20240 requires that all new landfills in California be sited, designed, constructed, and operated to ensure that wastes will be a minimum of five feet above the highest anticipated elevation of underlying groundwater. The waste containment unit can either be situated above the highest anticipated groundwater level or the operator may propose an engineered alternative. The project is designed to create the required five feet of separation between underlying groundwater and the landfill by incorporating a subdrain below the five foot combined thickness of the soil liner layer (and HDPE FML), the LCRS, and the protective soil layer above the LCRS. Since the subdrain will be free-draining, it represents the "highest anticipated elevation of underlying groundwater." As a result, the project satisfies the prescriptive requirement to create a five-foot separation between the waste and groundwater. The RWQCB has indicated that the proposed project should be treated as an engineered alternative to the prescriptive standard as defined under CCR Title §20080(b). The regulations authorize the RWQCB to permit an engineered alternative from any of the prescriptive standards (CCR Title 27 §20380(e)).

CCR Title §20080(b) states that:

"Alternatives shall only be approved where the discharger demonstrates that:

(1) the construction or prescriptive standard is not feasible as provided in §20080(c); and

(2) there is a specific engineered alternative that:

(A) is consistent with the performance goal addressed by that particular construction or prescriptive standard; and

(B) affords equivalent protection against water quality impairment."

With regard to the issue of feasibility (CCR Title §20080(b)(1)):

CCR Title 27 §20080(c) states "Demonstration [for §20080(b)]—To establish that compliance with prescriptive standards in this subdivision is not feasible for the purposes of §20080(b), the discharger shall demonstrate that compliance with a prescriptive standard either:

(1) is unreasonably and unnecessarily burdensome and will cost substantially more than alternatives which meet the criteria in §20080(b);

(2) is impractical and will not promote attainment of applicable performance standards. The RWQCB shall consider all relevant technical and economic factors including, but not limited to, present and projected costs of compliance, potential costs for remedial action in the event that waste or leachate is released to the environment, and the extent to which groundwater resources could be affected."

A Prescriptive Design Alternative is presented in Chapter 6 of this Final EIR, including a comparison of potential environmental impacts between the project and the alternative. The project allows for a greater capacity and a greater site life than if a Prescriptive Design were implemented on the site. Under the Prescriptive Design Alternative, it is estimated that the landfill capacity would be reduced by approximately two million tons of refuse and about two years of additional landfill life. This would result in lost revenue of approximately $68.5 million based upon current tipping fees of $39 per ton. This estimate substantially understates the true economic cost of the project since tipping fees are likely to be substantially higher than $39 per ton in twenty-eight years. Using an assumed yearly tipping fee increase of 4 percent, the economic cost of the Prescriptive Alternative grows to in excess of $339 million in twenty-eight years. Under state regulations, the RWQCB is to consider "all relevant technical and economic factors" in evaluating whether the Prescriptive Alternative is unnecessarily burdensome and will cost substantially more. (Title 27 CCR §20080(c)(2)). However, it is fair to say that a loss exceeding $339 million is unnecessarily burdensome and will cost substantially more by any reasonable standard. Accordingly, the project has satisfied this prong of the findings required to support the engineered alternative.

The second issue is whether the engineered alternative is consistent with the performance goal addressed by the prescriptive standard as required by Title 27 §20080(b)(2)(A). The subdrain system proposed for the project has been designed to create a minimum of five feet of separation between groundwater and refuge and is therefore entirely consistent with the prescriptive design standard. The engineered alternative therefore meets the performance goal required by Title 27 §20080(b)(2)(A).

The third issue is whether the project affords equivalent protection against water quality impairment. The subdrain system included with the project and the Prescriptive Design Alternative will not only collect the water underlying the landfill, but will provide an additional sampling point to assess the chemical characteristics of underlying groundwater and, will, in effect, represent an "early detection" system for potential groundwater impacts within the landfill footprint. The subdrain system included with the project and the Prescriptive Design Alternative will provide a means of actively collecting and controlling groundwater beneath the landfill footprint thereby ensuring the ability to collect and contain potentially impacted groundwater in

the event of a release. These benefits result in the project affording equivalent protection against water quality impairment. For these reasons, the project satisfies all of the findings required to support a variance under Title 27 CCR §20080.

3.8.4 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

The RWQCB regulates municipal and industrial stormwater discharge requirements under the NPDES program. To obtain authorization for industrial and construction stormwater discharges, the landfill must comply with a General Permit to Discharge Stormwater Associated with Industrial and Construction Activities. The operator has submitted a Notice of Intent (NOI) to comply with the NPDES Construction Activities General Permit and will submit a NOI for Industrial Activities concurrent with the application to obtain WDRs. A Stormwater Pollution and Prevention Plan (SWPPP) and Monitoring Program and Reporting Requirements (MPRR) have been prepared for the landfill in accordance with NPDES General Permit requirements and are contained in Appendix F of the JTD. At the time of closure construction the landfill cap would be covered by the Construction Activities General Permit. The closed landfill and post-closure maintenance would be covered by the Industrial Activities General Permit.

3.8.5 PERMIT TO CONSTRUCT/OPERATE

The proposed project falls under the jurisdiction of the SDAPCD for the monitoring and control of dust and gas emissions outlined in Rule 59 (d) (ii) A (Landfill Emissions Control Systems). The operator will apply for a permit to operate for construction activities and the control of resultant dust. It may also be required for groundwater treatment technologies. Facilities to collect and destroy landfill gas emitted from the landfill are planned for installation at a future date dependent on waste placement operations. At that time, the necessary permits will be acquired to operate landfill gas collection and destruction facilities, which may be planned for future operations.

3.8.6 OTHER PERMITS

While Proposition C waived some of the County approvals, in addition to permits listed in Table 3-5, the applicant may be required to obtain the following permits from San Diego County:

- Groundwater Well Permit
- Landfill Gas Migration Probes Permit
- Well Destruction Permits